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CONTENTS

The German Debacle of Stalingrad <i>Colonel Herbert Selle, German Army, Retired</i> <i>Translated and adapted by Karl T. Marx</i>	3
Corps in the Mobile Defense <i>Lieutenant Colonel Mitchel Goldenthal, Corps of Engineers</i>	14
Is There a Future for Amphibious Operations? <i>Lieutenant Colonel Clarence C. DeReus, Infantry</i>	25
The Case for Armored Cars <i>Richard M. Ogorkiewicz</i>	34
What Will the Enemy Tell Your Men? <i>Major R. D. Connolly, Signal Corps</i>	38
Logistical Coordination Between Allied Forces <i>Colonel Albert S. Britt, Jr., Artillery</i>	43
Mr. Calhoun's Army <i>First Lieutenant Vincent J. Fisher, Retired</i>	52
The Impact of Philosophy on National Strategy <i>Colonel George B. Pickett, Jr., Armor</i>	59
Two Lieutenants and Two Rounds <i>Major Ismet Peker, Turkish Army</i>	62
MILITARY NOTES AROUND THE WORLD	64
FOREIGN MILITARY DIGESTS	73
<i>The Atlantic in a World War</i>	73
<i>Army Officer—Mercenary or Missionary</i>	79
<i>Significance of Roads in Impassable Terrain</i>	86
<i>Aviation in Amphibious Operations</i>	88
<i>Guerrilla Warfare</i>	95
<i>Change and No Change in Russian Foreign Policy</i>	101
<i>Discontinuous Defense</i>	105
BOOKS OF INTEREST TO THE MILITARY READER	108

This copy is not for sale. It is intended for more than one reader.
PLEASE READ IT AND PASS IT ALONG

THE GERMAN DEBACLE OF STALINGRAD

Colonel Herbert Selle, German Army, Retired
Translated and adapted by Mr. Karl T. Marx

Many myths, legends, and opinions surround the various versions of the bitter World War II battle for Stalingrad which culminated in the destruction of the once proud and powerful Sixth German (Stalingrad) Army. The MILITARY REVIEW is pleased to present the first installment of a two-part article by the former commander of the Engineer forces of the Sixth German Army. Colonel Selle witnessed the slow, painful unfolding of the debacle. He was a part of it and without straying from what he saw, heard, or experienced, he covers the actual events and even the conversations and reactions of German military leaders. Much of what he tells here is new. In this installment he describes the situation from the German drive across the Don River in August 1942 and Hitler's strategy for the conquest of Stalingrad to the powerful Russian offensive of November 1942 which closed the trap on the city and its German invaders.—Editor.

IN A powerful offensive north of Kalach and on both sides of Vertyachiy and Peskovatka (Figure 1) the German Sixth Army, on 22 and 23 August 1942 carried the fight forward and crossed the Don River. Without interruption the divisions of the LI Army Corps (Von Seydlitz) and the Panzers of the XIV Panzer Army Corps

(General von Wietersheim, later General Hube) forged ahead and across the two heavy, engineer-built bridges, fanning out and lining up for a concentrated attack on Stalingrad.

—Paragraph two of the Army Order, dated 19 August 1942, stated:

The Sixth Army takes possession of the land bridge between the Don and Volga Rivers north of the railroad Kalach-Stalingrad and secures them toward east and north. The army will cross the Don River between Peskovatka and Ostrovski, constantly covering itself in a northerly direction. Its motorized units will then strike toward the hills between the Rossoshka River and the Bolzhaya Karanaya head waters to the Volga River north of Stalingrad. Other units will develop from the northwest and capture Stalingrad. This stroke will be accompanied by troops advancing on the southern flank and across the middle course of the Rossoshka River and will make contact southwest of Stalingrad with the motorized units from the neighboring army pushing up from the south.

On the evening of 23 August 1942 General Hube and his Panzers took Rynok, the northernmost suburb of Stalingrad. German reconnoitering parties reached the steep western banks of the Volga, surveying the vast, melancholy countryside. The Army was full of hope, although Hube's units had to overcome many criti-

The early successes of the German Army in its invasion of Russia were halted on the steps of Stalingrad primarily because of Hitler's blind disregard for reality and adherence to his own intuitive tactics

cal situations during the following days. I met General (Friedrich) Paulus who told me that the Russian artillery commander of the Sixty-second Army was among the prisoners and that he was very depressed and concerned not only about the fate of Stalingrad but also of the entire southern army group commanded by Timoshenko.

My eyes met those of Paulus—questioning, almost unbelieving, for since 1941 we had been told too often that the Russians had reached the end of their rope, too often to believe it now without serious doubts. Did we not remember the boastful, high-sounding phrases of the “all highest” order to start the final battle of annihilation of the Russian armies, allegedly writhing in their death throes? All combat soldiers, without difference in rank or command, laughed at the time (late fall of

Colonel Herbert Selle, German Army, Retired, took part in the major battles of World War I in France and Belgium. In 1936 he became commander of an engineer battalion and participated in the campaign against Poland. During the war with Soviet Russia he commanded the Engineer forces of the Sixth German (Stalingrad) Army. He was flown out of Stalingrad eight days before the fall of the Sixth Army to report to German Supreme Headquarters. Some weeks later he was arrested for defeatist sentiments and for lowering the fighting morale of the German armed forces, and was condemned to death but escaped the firing squad. In August 1944 he was at the invasion front in France and later in Hungary and Galicia. Upon return from British prisoner-ship he became secretary in the German Hunting Association where he now is employed.

Mr. Karl T. Marx was born in Germany and is a United States citizen. From 1929 to 1945 he served as a social service secretary with the YMCA. His other activities include teaching German over Radio Station WOR, and director and writer of “All Nations Hour,” Radio Station WGBS (now WMCA), New York City. He is the author of Der Feigling, five booklets of aphorisms, and many short stories and technical articles on unemployment and vocational guidance.

1941) about the unrealistic appraisal of an enemy who was fighting stubbornly for his native soil and country.

How criminal such false judgment proved was demonstrated a few weeks later when the German dead and debris piled up in front of Kalinin, Moscow, Tula, and Tver. While all these military and human tragedies occurred, Goebbels pronounced in grand style—far from any danger—that the Berezina had proved Napoleon's downfall, but that the Führer's talent and military genius would be assurance that nothing of the kind or even remotely similar could befall the German Army!

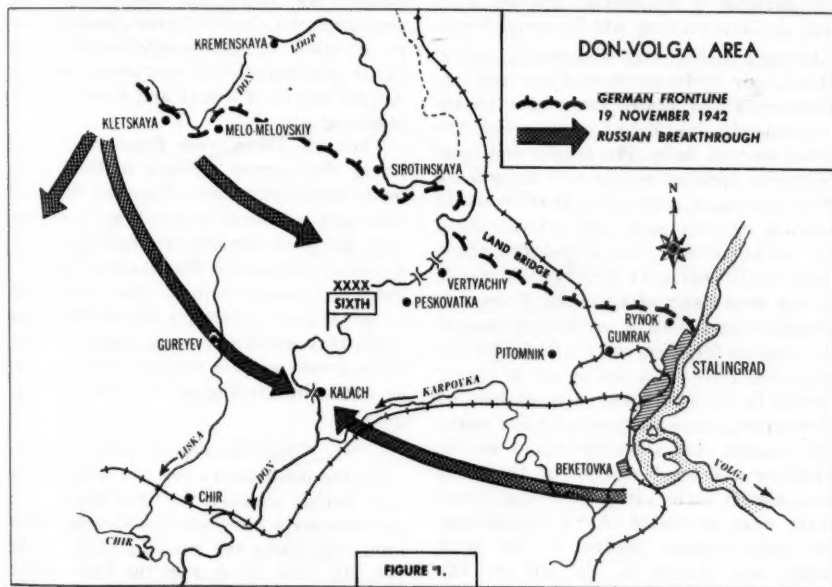
High Expectations Fade

The next few days passed amidst high tension and expectations. The 71st Division (Lieutenant General von Hartmann) succeeded, without great losses, in crossing the Don River near Kalach, and by forcefully pushing along the Karpovka valley on 24 and 25 August 1942, reached the southern section of Stalingrad. However, the final stroke, the end result of all the maneuvering—the capture of the city—did not occur.

Throughout the summer of 1942, ever since the battle of annihilation waged by von Kleist's First Panzer Army and the Sixth Army against the divisions of Timoshenko west southwest of Kharkov (12-27 May 1942), the Russians had shown only token resistance. They only changed these delaying tactics when they crossed the Don River near Kalach, then suddenly turned and faced the oncoming German Sixth Army. The result was the near-annihilation of the First Russian Panzer Army and the Sixty-second Army, leaving hundreds of burned out tanks in a narrow area near the Don River. In view of this there was some reason to assume that Stalingrad would fall without too much opposition, and that the serious Russian resistance would begin only on the east bank of the Volga.

This hope proved false. It is true we succeeded in capturing more than half of the city area, and in a rather short time at that. Slowly, however, Russian resistance stiffened. Red reinforcements reached the city from the railhead at Kotluban' and the northern sector was soon the scene of heavy Russian counterattacks. This northern front connected the right wing of the German divisions and halted at the

bridge" failed. During the last days of September 1942 the Russians dared one more large-scale attack, employing many hundreds of tanks and gaining considerable ground which caused us great worry. Only a determined counterattack righted the German position, inflicting heavy losses on the enemy, to include 98 tanks. The northern sector again was secure thanks to the soldierly qualities of Gen-



Don River (partially utilizing portions of the Tatar Wall) with the forces that had to secure Stalingrad against the north.

Against this land bridge, generally running in a west-easterly direction, the Russians launched numerous attacks. It became clear that a breakthrough or even a deep penetration at this point would force the German troops to yield toward the south, a move which would seriously, if not decisively, affect the fate of Stalingrad.

However, the attacks against the "land

eral Hube and his motorized and tank divisions of the XIV Panzer Army Corps.

Every House a Fortress

At the same time, the inner city of Stalingrad was the scene of the most sanguine fighting. Every house, hut, skyscraper, factory, and silo—everything became a bristling fortress spewing death and destruction. Extreme heroism on both sides became a standard performance. Attack and defense, rushes and counterrushes, fires, excited yelling, mortar and artillery

fire, and flamethrowers—Stalingrad became the living hell for which it is remembered. Rubble became fortresses; destroyed factories harbored deadly sharpshooters; behind every lathe and every machine tool lurked swift death. Every corner and every cranny threatened a sudden burst of automatic rifle fire and tumbling bodies. Every foot of ground had to be literally torn from the defenders. The heroism of Stalingrad, whether Russian or German, long will be remembered.

German losses were alarmingly heavy. Slowly our divisions burned out and replacements had slowed down to a trickle—completely insufficient considering the losses we took daily. The supply and reinforcement problem became still more acute when partisans, more often than we could prevent, interrupted or seriously damaged our only railroad line, a rickety, single track affair ending at Verkhne Chirskaya on the west bank of the Don. From this terminal point onward our trucks brought the supplies forward, using a 24-ton bridge across the river. Now this means of supply started to fall apart, not so much because of Russian attacks as lack of spare parts. The nearest central supply depot was at Kharkov and word reached us that they were almost "sold out"—fewer and fewer parts were available. As a consequence the quartermaster general of the Sixth Army was forced to fly out *Ju 52's* (Junkers transport planes) to bring in the most needed parts and supplies from far away Germany.

Thus it was with the Sixth German Army, an army in the midst of the most decisive fighting of the war, an army Germany and the whole world watched—for many different reasons.

Stalingrad a Caldron

Gradually the fighting for the land bridge ceased. The Russians realized the impossibility of breaking through at this front in order to outflank the German

Army from a northerly direction. The city itself, however, never was quiet. Time and again bitter fighting broke out. Entire rows of houses disappeared in dust and ashes when screaming shells and mines tore into them. Fires raged incessantly, creating a deathly shroud of smoke over the doomed city. Giant construction girders were torn and bent into strange shapes and forms. Only in cellars and bunkers was there life. There, troops and command posts huddled precariously, often in a state of near-asphyxiation when shells ricocheted into entrances, sending down showers of debris and fiery, searing blasts of air.

Then too there were Russian civilians living like hunted animals in these war-made holes and cellars. Somehow they had managed to evade evacuation; somehow they hung on amidst the horrible maelstrom of destruction that raged all around them and slowly reduced their home city to rubble and smoldering debris. What else could they do? To try and reach the hinterland over endless steppes, without food or water, in blinding snowstorms was impossible.

Give Valuable Ground

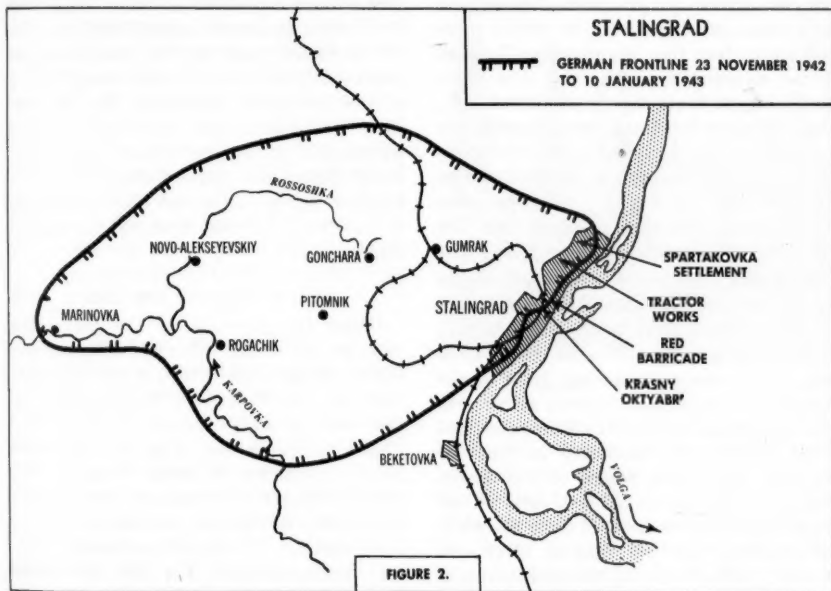
At the point where the left wing of the land bridge touched the Don River in a northwesterly direction, the German main lines ran along the western bank of the Don. In order to shorten the lines within the Kremenskaya loop of the Don River it became necessary toward the end of August 1942 to pull back the XI Army Corps (General Strecker) with its left flank anchored at Melo-Melovskiy and its right wing touching the Don River at Sirotinskaya.

This was a serious retrograde movement. The commanders were fully aware of the advantages thus gained by the Russian forces which, with one stroke, had quickly and without loss gained not only a great deal of territory but a strategically important bridgehead south of

the Don River loop. However, the German withdrawal could not be prevented, for the divisions in this sector had been in the frontlines for fully 18 months, with no relief, dwindling supplies, and practically no replacements. The troops were tired, deadly tired, and the German lines dangerously thin as long as they had to follow the contours of the Don loop.

The XI German Army Corps—the left

Fascist division commanders. The Hungarians, light units without rear echelons, fought only spasmodically. Their best divisions stood, arms ready, not in Russia but in their own province of Siebenbuer-gen, facing not Russians but their "allies," the Romanians. (In World War I the Germans tried successfully to put some fight and backbone into wavering allied units by inserting "Korsettstangen" (corset



wing of the Sixth Army—neighbored on the 1st Romanian Cavalry Division which in turn was the right wing of the IV Romanian Army Corps. Next to this Romanian unit, in the direction of Voronezh, followed Italian and Hungarian units. The Hungarians, hereditary enemies of the Romanians, wisely were separated from the Romanians by the interposed Italian troops. The Italians were forever eying the hinterland and never were quite sure whose commands carried the most weight—the Royalist commanding general or the

stays)—seasoned and determined German troops. During the campaign in Russia this proved impossible, largely because there were not enough German troops for such tasks.)

Southward from Stalingrad the Fourth German Panzer Army (consisting largely of Romanian infantry divisions) under Colonel General Hoth was too far drawn out to be of help to its northerly units and, moreover, it had to keep contact with the First German Panzer Army far toward the south on the Terek River.

Hitler's Strategy

Beginning in early October 1942 there were unmistakable signs of a Russian buildup in the easily gained bridgehead area of the Don loop. Extensive, dense forests east of the Don permitted good camouflage, while two good railroad lines between the Don and Volga enabled the enemy to resupply and reinforce his troops. Lack of air support made it impossible for our troops to interfere successfully with these ominous trends. It became more and more clear that the expected Russian thrust would aim at the left and right flanks of the Sixth Army simultaneously, with the push from the north pointing in a south southwesterly direction and reaching for a junction with a southern thrust northwestward into the Chirskaya area, thus closing the ring of steel and fire around the German Stalingrad Army.

Strangely, the Sixth Army was under the direct command of Hitler—safely and securely tucked away in his headquarters at Angerburg in East Prussia, about 1,000 miles from this most critical point of the Eastern Front. Hitler ignored all reports and warnings General Paulus submitted about the Russian intentions in front of the left and right wings of his army. Somehow, the “greatest strategist of all times” could not be swerved from his wishful thinking and his famous intuitions. General Paulus was reprimanded severely for his pessimistic evaluation and predictions and he could consider himself lucky that his strictly military reports were not interpreted as plain defeatism—something that many a German general had to face, as witness Field Marshal von Bock who had opposed the Stalingrad offensive and was promptly replaced by the more accommodating Colonel General von Weichs. General Paulus had pleaded for more troops, especially for the left flank of his threatened army, to act as combat reserves if and when the Russians struck at this very vulnerable point—and all

signs pointed toward such a thrust. Hitler declined the request and added insult to injury by ordering three or four tank and motorized divisions to be held in readiness for an assault on Astrakhan. We joked a great deal about this “caviar expedition.”

In the same year Hitler wanted to capture Murmansk and Leningrad, while the First Tank Army and the Seventeenth Army were scheduled to take Baku with its coveted and much needed oilfields. The “oil brigades” were held in readiness, and superheavy mortars already were rolling northward from Sevastopol for the assault on Leningrad. Strategy toward elimination of danger points was something Hitler no longer believed in—like a dream walker he moved about, oblivious of realities, forever clinging to wishful thinking.

Hitler Listened Too Late

Under the pressure of the increasing news on the hostile offensive preparations Hitler agreed—too late—on 15 November that the 1st Romanian Panzer Division and the seriously mauled German 22d Panzer Division be held in readiness under Lieutenant General Heim in the area southwest of Kletskaia. From there they could deploy as an operational reserve north or westward in case of a Russian breakthrough. The 1st Romanian Panzer Division consisted of a mixture of captured French and Czech tanks, the crews of which were in the process of their training.

Romanian troops, touching on the German left flank, could not be obtained—first, because there were not enough to go around, and second, because they were only lightly equipped. They had no tank defense weapon to speak of and all their proved valor would come to nought once Russian T-34's faced Romanian cavalry lances—as had happened once before. (I found out later at Hitler's headquarters

that the Romanians had pleaded for heavy antitank guns. They had been promised but were never delivered and a gallant ally suffered grievously because of this neglect.)

Sometime during October 1942 a general of engineers arrived at our headquarters with a rash of regimental staffs—something we needed least. He did, however, bring a company of fortress engineers, troops especially trained for preparing tank traps, dugouts, gun pits, and other fortifications. We all smiled when our newly arrived guest, with his many staffs and so pitifully few engineer troops, told us about his special task. He was supposed to build concrete fortifications—of all places here where there was no gravel at all, with the nearest pits hundreds of miles away. Cement could be had only from Germany. The poor general looked very much dejected when he found that out, but he dared not tell Hitler's headquarters about this fiasco.

Waning Spirit Is Felt

At about the time this quixotic event took place the 395th Division in the Stalingrad city area had orders to take Russian points of resistance in the northern district. Combat engineers were to precede them, preparing the way, to assist in the task of taking the strongpoints and then of pushing on toward the Volga River, thereby cutting a Russian resistance pocket in half. Initial success was all that was gained. Somehow the interplay between combat engineers and succeeding infantry failed. General Paulus was rightly indignant, for the elements of success had been at hand. This failure showed a sagging combat spirit, lack of will, a sense of defeatism—something that would slowly engulf the entire doomed Sixth Army.

When the quartermaster general, Lieutenant General Wagner, came to us to see for himself about supply and replacement problems he told us about a typical inci-

dent with the "greatest commander of all times":

During the summer of 1942 it became evident that our supply of gasoline for all types of locomotion had been depleted to a point where we had to wait for supplies from day to day production. This woeful fact had to be considered by any sane commander for any planned campaign did he not want to risk a complete breakdown in aviation as well as trans-



Ruins of Stalingrad

port on land and sea, not to speak of the most vital weapon at the time, the all powerful and decisive tank arm. Wagner told us that he spoke earnestly to the chief of the general staff, Colonel General Halder, about this situation, and asked him to bring the matter to the attention of Hitler himself. Halder agreed but stressed that he would have to wait for an auspicious moment and for a chance when Hitler would be in a receptive mood, or else he would only be showered with epithets and would have to endure the wrath of the mighty Führer. Halder never spoke to Hitler about this critical state of affairs and finally Wagner took it upon himself to tell Hitler about it.

Hitler was growing more impatient by the minute as Wagner spoke to him and finally and impetuously snapped: 'Yes, and. . . ?' Wagner replied: 'It means, my

Führer, that the gasoline and oil situation will have to be seriously considered in any planned campaign or action.'

This factual report caused Hitler to become very sarcastic. Somehow, he no longer considered anything impossible; anything he wanted or dared was possible, solely because he said or thought so. He skipped over matters of supply, replacements, distances, losses. Only his will was the limit of the range of possibilities.

He snapped his answer to General Wagner: 'I did not expect another answer from my generals, thank you. . .' That was all. And General Wagner? He shot himself after 20 July 1944—to escape death by strangulation, as so many officers suffered when Hitler escaped the attempt on his life and then struck back like a crazed tiger, remembering every little incident, every honest attempt to make him face facts and not fancy. They were his 'enemies.' The scrapers, the yessers, the liars, they were his comrades in arms—and finally his doom.

Führer's Big Promises

On 9 November 1942 Hitler spoke to his old cronies at the Burgerbrau in Munich. In front of Stalingrad we sat around our shortwave army radios and listened incredulously as Hitler yelled amidst deafening roars of approval:

Stalingrad will be taken and I, and only I, will set the time. We shall employ entirely new shock troop tactics and will thus capture the remainder of the city.

We sat around our receiving set in stunned silence. I dropped my head and simply stared ahead of me. In my opinion something dangerous had happened. A purely military situation had been reduced to the level of politics, nay, to the level of two contending political rivals, Hitler and Stalin. Strategic facts and consideration, human suffering and endurance, supplies, losses and replacements

—all these and many other factors were reduced to an ugly quarrel between two dictators. The troops, the facts of military life no longer mattered. Hitler, the man of iron, will tell us when, where—but will he tell us how? He never did, never in a sane, workable way. He dreamed up armies, situations, chances for success—and he and we lost.

I remembered his speech of 1 October 1942 at Berlin:

Now it is our special task to capture Stalingrad. I assure you, once that is done, nobody will ever be able to wrest that city from us again.

The day after Hitler's speech at the Burgerbrau in Munich I met General Paulus. He greeted me with the words: "Well, what have you got to say about yesterday's speech?" I answered: "I think about it exactly the way you do, General." He left my bunker without another word.

Bitter Fighting Continues

In the meantime, fighting in Stalingrad itself continued unabated, especially in the northern part. Of particular severity was the fighting in the slaughterhouse area and in and about Spartakovka Settlement, with only limited results. One day the area would be ours and the next day the Russians would chase us out again. Toward the close of October 1942 we succeeded, after many tries, in capturing the tractor works Dshershinski, the gun factory "Red Barricade," and the "Krasny Oktyabr Works." Our losses were heavy, irreplaceable, and useless. At the same time, Russian attacks against the "land bridge" started again without success, and south of Stalingrad Russian onslaughts mounted in tenacity and power.

Five engineer battalions now reached us by air, among them the 50th of which I had been commander during peacetime. These five battalions were Hitler's answer to the Stalingrad problem; they were the "new" tactics which would change every-

thing from bad to good in and around Stalingrad. It must be said in honor of the troops that they did succeed in breaking down a number of Russian resistance nests in Stalingrad, but their limited success changed nothing. The Russian threat around the town, around the perimeter, remained as before. In a few days these five German battalions were nothing but cinders—burned out, killed, wounded, missing, and prisoners. I wrote to my wife at that time: "He is to be blessed, who did not order this senseless slaughter."

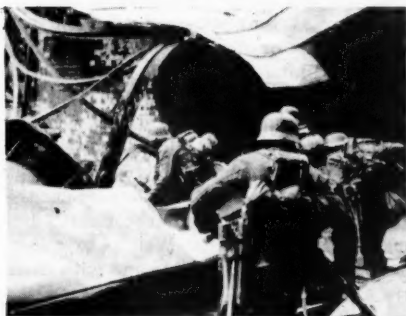
Until late fall we experienced mild weather. Almost overnight, however, heat gave way to cold, bitter cold. There is no gradual change of seasons, no compromise; today, tropical heat, tomorrow, snow and more snow.

Great Russian Offensive

The various commanders had pleaded and warned continuously, but in vain. On 19 November 1942 at about 0400 Russian artillery opened up in a wild, screaming, screeching crescendo of fury and sound. Before much time passed, long, powerful columns of Russian tanks, starting from the areas of Kremenskaya and Serafimovich, ground their way southward and southwestward toward the Liska valley—ground their way through and over the dazed Romanian divisions. A wild melee ensued. Romanian troops retreated, exposing the left wing of the German Sixth Army, the XI Army Corps, to the dangers of complete envelopment.

In vain did the XI Corps stand its ground. Its left flank reached into nothingness and it was only a matter of time before the Russian pinchers would snap closed. A quick decision was necessary, and XI Corps plus a part of VIII Corps had to cross to the east bank of the Don River. The chief of staff, Major General Schmidt, called me inquiring about possible reserves to seal off threatened sectors. I had nothing, not a single company to throw into the breach.

The operational reserves, the 1st Romanian and 22d German Panzer Divisions, tried to right matters but failed. They were too weak to counteract Russian weight in steel and men. But Hitler had found a scapegoat. Lieutenant General Heim, who was responsible for these two divisions, was arrested and taken to Moabit in Germany for trial. He was accused of starting his counteroffensive too late. Among the officer corps this arrest



Fighting in Stalingrad Tractor Works

caused widespread, hostile comment. Opposition to the "greatest general of all times" grew by leaps and bounds.

An Army Encircled

By 20 November 1942, only 24 hours later, the Russian push down the Liska valley had reached Gureyev and its tremendous momentum kept it going south without much opposition. The thrust from the Beketovka area near the Volga River, carried out with cavalry divisions, already had started, with the result that General Paulus was forced to transfer his headquarters from place to place with Russian reconnoitering parties only an hour behind him. At Kalach the two Red pinchers finally snapped shut. The ring had been forged. Preceding all this tragedy was confusion, alarm, rows of disabled tanks, stalled transport vehicles, and wounded

soldiers hobbling along, not knowing where to go or what to do. In all this turmoil the German-built bridge over the Don River at Kalach fell into Russian hands. Russian tanks soon were to surge over that bridge to unite with the forces from the area of Beketovka.

The debacle meant the closing of a tight ring around the Sixth German Army between the Don and Volga. About 350,000 Germans, and a few thousand Romanians and *Hiwis* (Russians in the German Army) now were cut off from any supply lines or direct contact with other German units. I had lost contact with headquarters and when my party reached Nizhne-Chirskaya we found that General Paulus and his staff already had flown into the *kessel* (ring). Being outside of the *kessel* I received instructions from the German chief of staff of the Fourth Romanian Army, Colonel Wenck, to collect as many troops as possible and with them try to stem a Russian push toward the south in the direction of Rostov. In this we succeeded after hard fighting.

After Christmas 1942 I reported to the army group commander von Manstein at Novochoerkassk. There I met my old friend Colonel Busse who told me about Manstein: "If I had not pleaded with him many, many times, he (Manstein) would have thrown up his job long ago. He stayed because of his troops, not because of Hitler."

No Help for Sixth Army

When I talked to Colonel Busse about the encircled Sixth Army, he told me that whatever reinforcements they had obtained could not be diverted to Stalingrad. They were used to stem several Russian breakthroughs at other places. He said that too many weak points had developed along the fronts, and that frequently the same divisions had to be rushed from danger point to danger point in order to stop a Russian attack. That

sounded ominous for the Sixth Army. I could not bring myself to believe that any commander in chief would dare the ignominious loss of such an army of so many tried and proved fighting men. I was wrong.

At engineer headquarters the mood was rather divided. Some held out hope; some did not. It was different with the staff of the quartermaster corps. There my old friend Colonel Finkh held sway. He was rather reserved in his opinion. An older general staff officer denounced Hitler and his cohorts loudly and vehemently. It was dangerous talk as he and Colonel Finkh found out. Both were hanged after the attempts on Hitler's life had failed.

A short time later I received orders to fly into the *kessel*, accompanied by my adjutant, Captain Fricke, a newlywed, and my orderly, Otto Blueher. Instead of 75 minutes the flight from Manstein's headquarters to the Stalingrad encirclement took fully three hours. We hit blinding, howling snowstorms and had to climb to more than 14,000 feet without oxygen masks. We suffered from terrible earaches and a deadly, tired feeling. Looking for the airfield at Pitomnik—always watchful of Russian fighter planes—we finally found it and had to descend so rapidly and steeply that we almost crashed. Here at this emergency airfield numerous wrecked airplanes dotted the field, with two giant *Condors* standing out among the rest of the crippled and crashed aircraft.

Everybody at Sixth Army Headquarters was cheered by my arrival. I had come from the "outside"—from where there were food, warmth, troops, and supplies. Everybody had expected me to tell them about relief measures—of the number of divisions on the march toward Stalingrad and how long it would take them to get there. There were officers who had entertained high hopes and who expected a long recital of countermeasures taken by Hitler to relieve "Fortress Stalingrad."

General Schmidt was perplexed when I told him the truth, yet he controlled himself and only said with a show of feigned belief: "We shall not lower our flag, my friend." And I, knowing better but eager

of hope left"! But deep inside of me I no longer believed it.

"Massengrab-Stalingrad"

In order to reach my new headquarters we had to drive over the Volga steppes, an endless, depressing snow desert with rows of wrecked German vehicles laying by the roadside, embedded in the snow, sometimes only little mountains indicating that under that heap of snow a truck, car, or tank rotted away with no hope of salvage or use. *Massengrab-Stalingrad—Massengrab-Stalingrad*—I repeated to myself inwardly over and over again. Mass grave and Stalingrad in German have a poetical sound.

So far the Reds had not attacked the *kessel* itself. They were trying for a breakthrough between the Don and Donets Rivers. That they were biding their time and bringing up material and reserves we had no doubt. We were trapped—unless.



German Patrol at the Volga River

to soothe his and the other officers' feelings, replied with similar aplomb: "Certainly not, Sir, as long as there is a spark

Today's Army has impressive mobility, both strategic and tactical, which would be a prime factor of success in any war emergency. Its units could be moved by air, if necessary, across oceans and continents, to any area of combat. By means of assault transport planes, our infantry divisions can now attain battlefield mobility by airlift comparable to paratroops dropping out of the skies upon enemy-controlled territory. Increased emphasis upon helicopters and other light air vehicles as organic division equipment is solving difficult problems of observation and fire control, the command and supply of dispersed units, and the rapid movement of small bodies of combat troops over even the most difficult terrain.

Secretary of the Army Wilber M. Brucker

Corps in the Mobile Defense

Lieutenant Colonel Mitchel Goldenthal, *Corps of Engineers*
Faculty, U. S. Army Command and General Staff College

As the enemy moves forward following his atomic strikes he is subjected progressively to increasing frontal and flanking attacks by highly mobile battle groups which move out to meet and destroy him. In this type of defense some penetrations must be accepted. As the enemy's initial momentum is lost, he is attacked by our own atomic weapons and then counterattacked from the flanks and rear by our battle groups and reserves. Flexibility and rolling with the punch, rather than rigidity, will be the keynote of the defense. The use of space will be considered a normal procedure.

—Lieutenant General Clyde D. Eddleman, Deputy Chief
of Staff for Military Operations

THUS General Eddleman visualizes the defensive land battles of tomorrow and in a few words dramatically highlights the concept of the modern mobile defense.

The purpose of this article is to illustrate how a corps commander can employ his command most efficiently and effectively, realizing the full potential of his atomic weapons, to accomplish his defensive mission. After a brief discussion of the mobile defense, consider three typical defensive situations as they would confront a corps commander—an organization of the corps for defense, an opportunity for a limited objective attack, and counterattack planning.

Mobile Defense Concept

The discussion of the mobile defense will include the concept, organization, and conduct of the mobile defense. General Eddleman's statement is an excellent summation of the concept of the mobile defense.

Because of the resiliency, depth, and inherent flexibility of the mobile defense, under atomic conditions this type of defense normally will be conducted by corps and higher echelons. The organization of the mobile defense basically is a strong point system combined with a powerful striking force. Employment of a proportionately weaker force in the system of strong points permits the retention of the

This article is in consonance with current doctrine as taught at the U. S. Army Command and General Staff College.—Editor.

greatest possible combat power in the striking force. Adequate security forces are, of course, a definite prerequisite.

Aggressive action to destroy the enemy keynotes the conduct of the mobile defense. Defensive tactics must be designed and executed to cause the enemy to create remunerative targets and, at the same time, keep the friendly vulnerability to a

Under atomic conditions, corps and higher echelons normally will conduct the mobile defense. In order to do this properly the corps commander must have the necessary tools and must use them efficiently

minimum. Control of the situation and retention of the initiative are achieved by forcing the enemy to make his main effort in an area of the defender's choice, voluntary limited offensive action, and the counterattack.

Normally, maximum benefit is gained from the use of atomic weapons through rapid ground exploitation of the weapon's effects, rather than by relying on the weapon's effects alone. This exploitation of atomic strikes should be carried out by a powerful combined arms force of at least a division—and normally at the corps echelon a reinforced armored division will be called upon to do the job. Use of such a powerful striking force is recognition of the fact that because they will be facing superior attacking forces the defenders must not risk defeat by counterattacking with a force not completely adequate to the task. The size of this force dictates detailed planning at the corps level—planning culminating in a corps operation order which will include selection of targets, weapons and delivery means, and details of maneuver and fire support.

To conduct the mobile defense properly the corps commander must have the necessary tools and he must know how to use them most efficiently. The tools are troop units, a definite atomic weapon allocation, operable available delivery means, his

subordinate's supervisory and technical atomic knowledge, and his own ability to integrate the employment of atomic weapons with the scheme of maneuver and other fire support means.

General Situation

An uncomplicated schematic situation adequately illustrates the fundamental considerations of the corps in the mobile defense.

Aggressor forces attacked across the friendly border on 30 July and by 1 August have reached positions shown on Figure 1. Friendly forces are conducting a delaying action and plan to hold a bridgehead east of the Styx River. Major units of the I Corps are as indicated and, in addition, normal support units are present. Aggressor has control of the air and both sides have used atomic weapons tactically. It is estimated that Aggressor enjoys an advantage in atomic weapons. Weather conditions are excellent and the terrain provides no particular advantage to the defender. The Mill River is fordable with difficulty east of Larkin and easily fordable west of Larkin. In the corps sector the road net is excellent and soil trafficability varies from good in the west and center to unsuited in the east.

At 010300 August an order from army directed I Corps to initiate a withdrawal at 012100 August to defend without delay the Mill River. Twentieth Army has made a 15-day allocation of atomic weapons to I Corps and a heavy gun battalion (280-mm) is attached to I Corps. The receipt of the mission generates the normal sequence of command and staff action which culminates in the operation order.

Corps Commander's Analysis

The previously prepared withdrawal order directing I Corps to fall back to Mill River has been disseminated. It is half an hour since receipt of the army order, and the corps commander is exercising his

Lieutenant Colonel Mitchel Goldenthal is the author of "Work Wanted" which appeared in the March 1956 issue of the MILITARY REVIEW. He graduated from the United States Military Academy in 1943, and received a Master of Science degree from Texas A&M College in 1947. During World War II he served with the 90th Infantry Division, and later was Chief of the Technical Intelligence Section, G2 Division, Headquarters, United States Forces European Theater. After graduation from the USA CGSC in 1954, he was assigned to the Engineer Center, Fort Belvoir, Virginia. In July 1955 he was assigned to the faculty of the College where he is serving in the Department of Larger Units and Administrative Support.

tactical judgment and ability to reason logically as he prepares to issue planning guidance to his staff:

"Before I issue any planning guidance I'd better analyze my situation. My mission is to defend the area south of the Mill River. I also have the job of left flank protection for the army.

"Aggressor has control of the air so this means he will have a surveillance advantage over me and my close air support will be limited. But I'm sure that Twentieth Army can regain temporary control of the air over my corps sector to permit execution of desired ground maneuver. I'm opposed by two Aggressor corps with excellent morale and combat effectiveness. Aggressor has plenty of mechanized units to exploit any penetration. Army has told me that I can count on only a comparatively limited number of atomic weapons for the next 15 days. Although the atomic situation is one of approximate parity, Aggressor does have an edge. I'll have to husband my atomic weapons carefully so that I will have the atomic means to counter any capabilities Aggressor may choose to adopt.

"I have a wide front to cover. The area favors an Aggressor attack down the middle of the corps sector. The Mill River is not much of an obstacle but it's the best I've got. The ridge on my left flank is an excellent obstacle; I can use it to good advantage. The terrain is more favorable for the defense in the eastern portion of the corps sector. The enemy use of armor is favored in the western portion of my front.

"It's obvious to me that Aggressor will launch an early attack reinforced by his mechanized divisions and using available air, artillery, and atomics. He will first try to get the high ground in the vicinity of Horton, and then drive for the Styx River.

"It's apparent I must keep my atomic vulnerability to a minimum to prevent

losses and to keep Aggressor from gaining additional combat superiority. Next I must endeavor to force him to form lucrative atomic targets which I can destroy with as few atomic weapons as possible, used in conjunction with the maneuver of my ground elements. I must reduce his combat superiority. Army has stated that surface atomic bursts will not be acceptable.

"The first thing I can do is to deceive him as to the forward edge of the battle area (FEBA). An auto route crosses the corps sector diagonally. This road is not parallel to the Mill River. The use of this road as a security line to deceive Aggressor looks like a good bet. Also the more I can confuse and delay him, the more time I gain to increase the strength of my defense.

"I'd better consider which type of defense the corps should adopt. In this situation the assigned *mission* permits the battle to be fought in sufficient depth. From the present line of contact to the Mill River is about 40 miles; from the Mill to the Styx River is about 80 miles. Next, the terrain affords sufficient depth of the forward defensive area to permit the employment of a large striking force and is favorable for the maneuver of the striking force. I consider my *mobility* to be at least equal to that of Aggressor. I feel that Twentieth Army can arrange for the control of the air to permit free movement when desired. I don't believe I have adequate *time* or *forces* to organize a compact defense. Anyway the Aggressor's atomic advantage dictates the greatest possible dispersion consistent with the accomplishment of the *mission*.

"For these reasons and because I don't have enough combat power to prevent Aggressor from crossing the Mill River, the position defense for the corps is out. However, the mobile defense could work very well. The greater defensibility of the eastern part of the corps sector would

favor one infantry division in the position defense along Mill River. Now if I don't permit Aggressor to cross in the east he will be forced to try the west. The terrain favors this anyway. I must base my entire defense plan on forcing him to penetrate in the western sector, controlling this penetration to the extent that he will have to mass, and then destroying his forces in the penetration by atomic fires and my striking force.

"I must provide for a strong covering force with atomics to get the maximum delay. I'll consider giving both infantry divisions in the forward defensive area a limited number of atomics to ensure accomplishment of their assigned missions. The bulk of my atomics will be kept in corps reserve.

"My ability to control Aggressor, compress him into a suitable target, and then destroy him will result in success for my corps."

Based on all available information, the Commanding General, I Corps, now would present his planning guidance which would include his general idea as to the manner in which the operation should be conducted. As a result of his staff's estimates, his own estimate of the situation, and his decision the corps commander then would issue his concept of operations as follows:

Concept of the Operation

Upon completion of night withdrawal from present positions, corps conducts a mobile defense in sector permitting Aggressor to penetrate generally to Line Red, at which time the 20th Armored Division (Reinforced), supported by atomic weapons, counterattacks to seal off and destroy Aggressor forces in the penetration. The 10th Infantry Division conducts a position defense of the Mill River line in its sector to prevent crossings and to force the enemy to cross farther upstream. The 5th Infantry Division conducts a mobile defense in sector permitting Aggres-

sor to penetrate to Line Red, only if Aggressor masses sufficient strength to do so. The 20th Division as the corps covering force holds Aggressor north of security Line Zilch until 032100 August, achieves maximum delay in order to provide adequate time for the preparation of the Mill River line area; then corps striking force. The 111th Armored Group (-)



initially corps reserve; attached to 20th Armored Division upon completion covering force mission.

Priority of conventional fires to 5th Infantry Division. Maximum available air effort to close support of covering force until withdrawal behind Mill River; then to frontline divisions.

Several atomic weapons will be allocated to the 5th Infantry Division, 10th Infantry Division, and the 20th Armored Division.

sion. Other atomic weapons will be employed under corps control forward of the Mill River in support of the frontline divisions and the corps striking force and behind FEBA in support of corps counterattacks. Surface bursts will not be employed without prior approval of army. Maximum damage to Aggressor personnel and armor is desired without exceeding moderate damage to friendly forces.

The purpose of the concept of operations is to amplify the decision to ensure there will be complete understanding of just how the corps commander visualizes the conduct of this operation.

Operation Plan

Next the operation order would be issued. Part of the operations overlay accompanying this order is shown in Figure 2. The 5th Infantry Division would have the following attachments: a medium tank battalion, an armored cavalry regiment (-), a light howitzer battalion (105-mm self-propelled), and a transportation light truck battalion (-).

The 10th Infantry Division would have the following attached: a light howitzer battalion (105-mm SP), a transportation light truck company, and an armored cavalry battalion.

While on the covering force mission the 20th Armored Division would have attached a medium tank battalion, the armored cavalry regiment to be attached later to the two infantry divisions, an armored engineer battalion, and a field artillery group consisting of two medium howitzer battalions (155-mm SP), one heavy gun battalion (155-mm SP), three heavy howitzer battalions (8-inch SP), two automatic weapon battalions of anti-aircraft artillery, and the two light howitzer battalions (105-mm SP) to be attached to the infantry divisions later.

Barriers Planning

Barriers of all types would be used in the organization of the defense. The plan-

ning and execution of the concept of the mobile defense with its wider and deeper sectors clearly indicates the pressing need for barriers in depth as a part of a corps defensive plan. Barriers employed will depend upon the available labor, time, equipment, and matériel available, and in the mobile defense provides potent assistance to the commander in the execution of his missions. The barrier plan is designed to deny certain areas so that the defender can achieve additional control over the enemy. In other words, it is desired to canalize the Aggressor forces into areas where they can be destroyed by atomic weapons in conjunction with counterattacks. However, barriers must not hinder the movement of the striking force or shifting of strong points.

Atomic Employment

A five-day allocation period would be used as a control measure to reserve for the corps commander the ability to weight the operations as necessary in implementing his decisions throughout the entire period.

Atomic weapons are allocated to the 10th Infantry Division since, in the position defense which it will adopt, the division reserve is comparatively small. The division commander must have immediate control of atomic weapons power to ensure holding his position along the Mill River.

Atomic weapons are allocated to the 20th Armored Division for use only while on the covering force mission. Any weapons remaining after the completion of the covering force mission will revert to corps reserve immediately. Forces other than the covering force will be specifically prohibited from using atomic weapons or fires until after the withdrawal of the covering force south of the Mill River line and on corps order.

Atomic weapons are allocated initially to the 5th Infantry Division which is in the mobile defense. The concept of the

mobile defense visualizes using the bulk of the corps combat power to destroy the enemy at the time and place desired by the corps commander. Friendly forces must force the enemy to form suitable atomic targets and then capitalize on this situation by striking with atomics and exploiting forces. However, the 5th Infantry Division should have atomic weapons for use in local counterattacks and to facilitate generally the accomplishment of its mission.

The Chief of Staff of the United States Army, General Maxwell D. Taylor, has said:

It may not be too much to say that the purpose of land maneuver tends to become that of finding or forming suitable enemy atomic targets, then of exploiting the effect of atomic fire.

The remainder of the available atomic weapons are retained in corps reserve. The essence of the mobile defense is strong counteraction. The corps commander must maintain sufficient atomic means and maneuverability to ensure his retention of this counteraction capability. He must be able to take immediate advantage of any suitable opportunity to destroy the enemy.

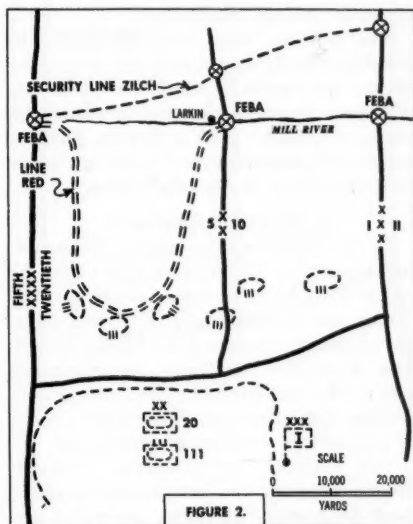
The foregoing represents the initial allocation of atomic means. Subordinate commanders certainly have the duty and prerogative of requesting atomic weapons and fires they consider necessary during the conduct of the defense.

The covering force commander will use his allocated atomic weapons to facilitate the accomplishment of his mission. More specifically, he probably will use these atomic weapons to achieve disengagement of his forces should they become heavily engaged. Atomic firepower properly used by the covering force commander can cause considerable delay, confusion, and damage to Aggressor. The use of atomics should reduce the number of disengagement type maneuver counterattacks required of the covering force. This use of atomics should

conserve the maneuver strength of the covering force, an important consideration in view of the fact that the covering force eventually will become the corps striking force. The stronger the corps striking force, the more efficiently and effectively can the corps' mission be accomplished.

Allocating Atomic Weapons

Factors considered in allocating atomic weapons are the mission, area of operations, relative combat strength of oppos-



ing forces, and enemy capabilities. The mission, of course, is most important. The commander already has visualized what he expects his divisions to accomplish, and the time he expects to gain as a result of their dispositions and actions. His allocation of atomic weapons must be based primarily on what these divisions will need to accomplish their mission successfully.

The area of operations may determine the number of atomic weapons necessary to accomplish the mission. A division de-

fending strong defensible terrain may need fewer weapons than a division defending terrain which definitely favors the attacker. In the present case, however, the concept invites a penetration in the sector of the 5th Infantry Division—but only if Aggressor is willing to mass sufficient force to effect a penetration.

By his aggressive conduct of the defense the commander hopes to overcome his initial disadvantage in the matter of relative combat strengths. The judicious allocation of atomics can alter the relative strength picture markedly.

The defender must have the ability to counter quickly any capability which the enemy may choose to adopt. The allocation of atomic weapons and fires provides the corps commander with a flexible, positive method of counteracting the enemy's adoption of certain of his capabilities.

Priority Allocation

In the situation depicted the Commanding General, I Corps, recognizes that he has a wide front to cover, relatively few forces, and a comparatively limited number of atomic weapons for a 15-day period. The disposition of forces, counterattack plans, fire and barrier plans, and atomic weapon allocation are interrelated closely and cannot be considered unilaterally.

For example, in allocating available atomic weapons, the bulk of the weapons must be retained in corps reserve. Since sufficient means to destroy the enemy must be retained, this use of atomic weapons is the first priority. Additionally, the corps must have adequate time to prepare the defensive sector and still ensure a powerful striking force. Therefore, the second priority is the allocation of atomic weapons to the covering force. Finally, the last priority considered is the allocation of atomic weapons to the divisions in the forward defensive area to support the planned commitment of the corps striking force and to permit the accomplishment of other assigned missions.

Certainly the corps commander would be interested vitally in two methods available to him to maintain adequate control and initiative in the defense, that is, *limited offensive actions* and *counterattacks*.

Limited Offensive Actions

Assume that the covering force has completed its assigned mission successfully and Aggressor has closed with the forward edge of the battle area (FEBA) at 040300 August. The time is early morning 5 August. During the preceding evening heavy Aggressor vehicular traffic has been reported. However, the organic mechanized divisions of the Aggressor rifle corps opposing I Corps have not moved. Clandestine sources, patrol action, and aerial photos indicate the concentration of an Aggressor rifle division in the vicinity of Beannville (Figure 1). All indications point to an early attack by Aggressor to seize the high ground near Horton.

In light of such information, the corps commander must consider various courses of action before making a decision concerning this Aggressor concentration. Possible courses of action dealing with the concentration are:

1. Do nothing.
2. Request additional atomic fires from army to attack this concentration.
3. Use many of the comparatively limited atomics available to I Corps and attack by atomic fires alone.
4. Use a lesser number of the I Corps atomic allocation and exploit these atomic fires by one of the following:
 - a. The entire corps striking force.
 - b. A portion of the corps striking force.
 - c. The striking force of the 5th Infantry Division.
 - d. An armored cavalry sweep.
 - e. A helicopterborne attack.
 - f. Nonatomic fires.
5. Use only nonatomic means (air, artillery, and ground maneuver elements) to attack the concentration.

These courses of action should be analyzed in light of the mission, the area of operations, relative combat strengths, and enemy capabilities. Limited objective attacks involving ground maneuver are undertaken only when conditions are highly favorable. This is true even though ground exploitation should follow the use of atomic weapons if feasible. Against numerically superior forces the use of atomic weapons facilitates action previously considered impossible.

The following items would be considered carefully by the corps commander before deciding which course of action to adopt:

1. Atomic.

- Are the atomic means presently available to I Corps sufficient to destroy this concentration by atomic fires alone?
- What is the projected allocation of atomics by army to I Corps in the future?
- Will army attack this target with larger atomic weapons under its control?
- How can I Corps best utilize its allocated atomics in view of pending Aggressor attacks?

2. Air.

- Can local control of the air be gained to permit a limited objective attack?
 - Is a helicopterborne attack feasible?
3. *Time.* How long will this attack take if ground maneuver is used?

4. Terrain.

- Does the terrain favor ground maneuver in the area?
- Is the fordable Mill River a formidable enough obstacle to preclude an attack?

5. Enemy Capabilities.

- Will the corps be exposed needlessly to atomic attack?
- Are there Aggressor elements capable of influencing any ground action I Corps may undertake and if so, to what extent?

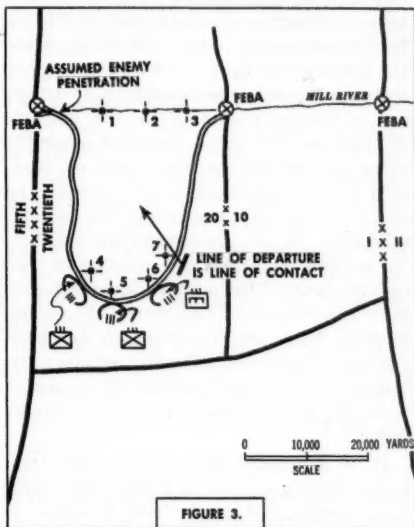
6. *Enemy Dispositions.* Do present Aggressor dispositions particularly favor one or more of the courses of action?

7. Gain.

a. Will the accomplishment of the assigned defensive mission be facilitated by the adoption of one of these courses of action?

b. Will the estimated cost be greater than the projected gain?

In this situation, after carefully weighing the advantages and disadvantages of each course of action, the commander decides to employ a lesser number of the



corps atomic allocation and exploit these fires with the corps striking force.

Counterattack Planning

A second method used to regain or maintain the initiative is a counterattack.

Figure 3 depicts one of many counterattack plans which would be prepared at the corps level. The over-all plan for the mobile defense is based primarily on the planned use of the striking force. Units in the forward defensive positions are disposed to support the planned use of the striking force and, if possible, to divert

the enemy main attack into an area of the defender's choice.

Figure 3 shows the area of the enemy penetration to be about 25,000 yards wide and 30,000 yards deep—a good size piece of real estate. The counterattack strikes the Aggressor on the flank of the penetration. The line of departure is the line of contact. In a nonatomic situation the defender normally endeavors to strike the penetration on the flank or where the enemy can be expected to offer less resistance. Although not illustrated in Figure 3, the commander might decide to strike the penetration on its nose because atomic weapons provide the capability of effecting a sizable reduction in the enemy's strength at this point. Forward assembly areas and attack positions will be occupied for the minimum time and with the minimum forces essential to the accomplishment of the counterattack mission. No terrain objectives are selected in this counterattack. The counterattacking forces have the mission of destroying the enemy in zone. After the counterattack has been executed successfully the 5th Infantry Division would resume control of its sector from the 20th Armored Division on corps order.

It is estimated that at the time the counterattack is launched Aggressor may have elements of one or two divisions in the penetrations. It will require the entire corps striking force to ensure the destruction of these forces and the restoration of control of the defensive areas.

How can the use of atomic weapons assist the corps commander in the accomplishment of his defensive mission? At the same time, how can the destruction of the enemy force now threatening the accomplishment of that mission best be effected? In the reduction of an enemy penetration atomic weapons can best be utilized to isolate the penetration and deny forces within the penetration reinforcements and needed administrative and combat sup-

port; and destroy as much of the enemy as possible in the penetration itself. The planned use of atomic weapons must be coordinated closely with the ground maneuver plan.

Three atomic weapons are delivered at desired ground zeroes (DGZ's) 1, 2, and 3. These three weapons should seal off the penetration, although such an effect may be temporary. In addition, four smaller atomic weapons will be employed at DGZ's 4, 5, 6, and 7. It is planned that these four weapons will breach the enemy crust and open the gap along the edges of the penetration. Of course these weapons also should kill as many of the Aggressor in the area as possible, further slow Aggressor's attack, and facilitate the advance of the corps striking force. In all, this counterattack will cost a total of seven weapons but should result in the almost complete destruction of the enemy divisions within the penetration.

The predicted over-all level of damage cannot be determined at this planning stage because of the lack of exact knowledge of the target elements. Great care must be exercised in the selection of DGZ's so that the maneuver plans of the striking force are not affected materially by areas of induced radiation. Certainly the careful selection of DGZ's based on accurate intelligence will result in more total enemy casualties. The improper use of atomic weapons could create an obstacle that would impede ground movement. Attacking Aggressor troops must be destroyed as near to the nose as troop safety considerations permit if the crust of the penetration is to be broken.

The judicious application of atomics coupled with the aggressive employment of the exploiting striking force transfers the initiative to the defender and enables him to accomplish a successful defense.

Conversely, the vulnerability of friendly forces is a major detriment to the successful accomplishment of the defensive

mission. Once Aggressor has located friendly forces he may employ atomic weapons to destroy them. Every effort must be made to reduce this over-all vulnerability to an acceptable minimum. Dispersion alone is not a cure-all for minimizing atomic effects. Protection also is a most important element to offset the effects of atomic weapons.

CONCEPT AND CONDUCT OF MOBILE DEFENSE

PURPOSE

The purpose of the mobile defense is to find or form lucrative enemy atomic targets and to exploit the effects of our atomic fires rapidly. Mobile defense emphasizes the application of mobile combat power in preference to integrated organization of the ground.

TROOPS AND ATOMICS

Disposition of forces and allocation of atomic weapons are determined principally by careful consideration of the mission; the area of operations, to include weather, width of front, critical terrain, avenues of approach, and obstacles; relative combat power of opposing forces; and enemy capabilities.

ATOMIC EMPLOYMENT

The use of atomic weapons greatly facilitates defense against numerically superior forces. Conversely, friendly force vulnerability to atomic weapons effects must be reduced to the minimum.

Small-yield atomic weapons increase the flexibility of the defense and accomplish military needs with minimum destruction. Large, definitely located enemy concentrations are suitable atomic targets even though conditions may preclude exploitation by ground attack.

Effective use of atomic weapons is dependent on accurate, timely target acquisition. There is no special atomic intelligence system. Intelligence data on targets suitable for attack with atomic weapons is acquired by normal intelligence processes.

STRIKING FORCE

The commander accepts the risk of holding portions of his forward defensive area with minimum strength to permit concentration of maximum combat power in his striking force.

The planned employment of the striking force is the basis for the organization of the forward defensive area. The striking force is used to destroy the enemy—either by counterattack after he has penetrated or by limited objective attacks which strike the enemy in his assembly area, attack position, or on an exposed flank.

FORWARD DEFENSIVE POSITIONS

Forward defensive positions (usually garrisoned by infantry) may consist of any combination of observation posts and strong points. They are located and employed to detect, delay, disrupt, and canalize the enemy, forcing his attack into areas chosen by the defender as most favorable for the employment of his striking force.

In order to force the enemy into selected areas it sometimes will be necessary for certain units in the forward defensive area to adopt forms of the position defense.

COUNTERATTACK

The mission of the counterattack is the destruction of the enemy, rather than the restoration of a position.

The maximum available force, supported by all available fires is used in the counterattack.

The counterattack is launched when the enemy's main effort has been located, when progress of his attack has been slowed, and before he can bring in additional troops with which to reinforce the attack.

Counterattack plans are based on assumed penetrations and should include the objective, direction of attack, line of departure, forces to be employed (to include atomics), and other coordinating details

necessary to achieve unity of command such as boundaries, limiting points, and forward assembly areas, if necessary.

SPOILING ATTACKS

Although ground exploitation normally should follow the use of atomic weapons, if complete exploitation is not possible, spoiling attacks (raids or limited objective attacks by mobile forces) with no intent to hold the terrain may be employed. However, limited objective attacks are undertaken *only* when conditions are favorable.

COMMUNICATIONS

Signal communication plans and operations must be kept highly flexible and must provide effective uninterrupted service in

support of all schemes of maneuver under consideration, despite strong enemy attack.

BARRIERS

Barrier systems are designed to support tactical plans, and barriers are sited to take advantage of natural obstacles and to restrict and canalize movement.

Nuclear warfare has posed new problems for the commander in the deployment of his forces and the conduct of operations. The mobile defense, intelligently and aggressively employed, offers a means of taking maximum advantage of troop strength, terrain, dispersion, and atomics while at the same time minimizing friendly atomic vulnerability.

TO OUR READERS

The United States Army Command and General Staff College has several important missions—of major importance is the preparation and presentation of high-level instruction to mature and experienced officers in resident and non-resident courses each year.

In order to place our doctrine and tactical concepts ahead of the technological and organizational changes taking place in our Army today we found it necessary to accomplish a complete rewrite of all instructional material to be used in the academic year of 1958.

The printing of this new material as compared with previous years has imposed a critical load upon the facilities of the Army Field Printing Plant at Leavenworth, which supports the MILITARY REVIEW in addition to the instructional requirements of the United States Army Command and General Staff College.

Your copy of the MILITARY REVIEW has been delayed slightly each month this spring and summer. We solicit your understanding of the important reasons necessitating this delay and we will return to schedule at the earliest opportunity.—Editor.

IS THERE A FUTURE FOR AMPHIBIOUS OPERATIONS?

Lieutenant Colonel Clarence C. DeReus, *Infantry*
Joint United States Military Aid Group, Greece

OF ALL military operations the amphibious assault has, in the past decade, been placed in the most tenuous position. The alarmists have predicted in adamant terms that the waterborne assault was a "dead duck." To fortify these claims of the ultimate fate of amphibious operations these same alarmists have displayed schematic charts of the Normandy landing and then superimposed upon these graphic exhibits ever-increasing red circles. This was assumed to show that forevermore the amphibious operation was doomed to inevitable failure.

On the other hand, there always appeared a soothsayer who applied a mystic "leaven" of speed, mobility, and flexibility and predicted that by adding just a touch of each in proper proportions to the old "recipe" all was well. This same conservative always added, as an afterthought, that a pinch of dispersion would be necessary to assure a palatable success, concluding that if such a panacea were concocted and taken as directed there appeared little basis for alarm concerning the future.

Eventually into the midst of the inevitable heated argument between these two extremists would dash a master of compromise who would maintain that a workable solution lay somewhere between these

opposing positions: given the proper "situation," with infallible intelligence, and a cooperative enemy not too determined to win (or more given to doing battle at another time and place) amphibious operations might be conducted within the realm of "calculated risk."

These diverse opinions appeared ridiculous or sublime to the listeners, dependent upon their personal beliefs. Few stopped to recognize that each view was partially correct, due largely to the fact that each debator mentally launched and analyzed his amphibious operation against the backdrop of a different situation. Thus an essential factor influencing any discussion of future amphibious operations is a definition of the kind of war to be fought.

Today, there are four concepts or philosophies of war. One concept is that of *total war*—a war in which no holds are barred and in which the inevitable nuclear (and thermonuclear) exchange will preface and surmount all else. Another concept is that of war in which *nuclear weapons may be used with a restriction*—one mutually agreed to and morally accepted by both sides and designed to confine the nuclear exchange to the combat forces of each of the combatants. The third concept visualizes a war which may be *global in nature and scope but in which*

There still is a place in the scheme of war for amphibious operations. Modification and rejuvenation of this skill to a point where it will pose a serious threat to an enemy should be considered by military leaders

the mutual fear of destruction is so great that atomic weapons will not be used in any form. Objective appraisal of the past permits definition of a fourth form war may take. This is the *small-scale war*—a peripheral sniping—in which, by design, the action is limited to a restricted area and reduced scope.

Volumes have been and are being devoted to discussions of the logic of each of these views. It is not within the purpose of this discussion to debate further these controversial theories. To do so would require one to draw a complete set of world situations, embellish each with timely intelligence, and draw a final conclusion which would parallel the most difficult decision man will ever have to make within our age.

Instead, it is intended to examine objectively the future of the amphibious assault against each of these broad theories.

It is conceivable that in the normal evolution of war each of the forms mentioned above *could* lead to any other. There are those who maintain that a peripheral "scrap" *could*, improperly restricted, grow to an all-out "bomb-swapping." Also it is feasible to assume that a war that started as an atomic holocaust would quickly shrink to a limited war as each combatant

struggled to impose his will on the other with such remnants of military power as might remain. In the latter case, limited war probably would be the maximum capability even if all the remaining resources were to be massed at a given point.

The problem is to view against each of these backdrops the use of sealift to move ground forces to contact and, if such movement appears feasible, to draw conclusions as to what techniques might prove most effective.

Total War

Against a vision of total war the conduct of an amphibious operation poses innumerable problems and many of them are of such proportions as to appear insurmountable. To group the necessary shipping would present an unacceptable risk. Adequate port facilities for mounting an operation of significant size would prove appropriate targets in themselves, even though shipping was not clustered there. In spite of these obstacles an operation could be mounted by using widely separated staging areas, over-the-beach embarkation, and staggered times of outloading and departure. The greatest limiting factor would be the provision of adequate logistical support and the accompanying followup necessary to maintain the force. This sizable logistical effort undoubtedly would lead logisticians to paint a somber picture as to the probable success of the operation.

Assuming, however, that the limitations could be circumvented, such an assemblage of shipping, men, and weapons would meet with far greater problems as it began to converge on the objective area. At this point some degree of concentration would be imperative to assure the minimum essential control. This massing, even though it might appear negligible in comparison with past operations, would be sufficient to invite atomic destruction. Dispersion sufficient to reduce the probability of atomic strikes to the category of "ac-

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ceptable risk" would spell defeat in detail for ground forces as they were committed to action. If this defeat in detail did not take place at the outset, it would be impossible to sustain this force for any period of time because of the probable attrition to which it would be subjected. Its mission of performing a purposeful task on the ground could not be accomplished.

There appears to be little if any hope for the successful conduct of an amphibious operation when an unlimited exchange of atomic weapons sets the pattern of war, except as part of the aftermath.

Amphibious forces could not move and live in sufficient strength to present a significant threat. Under those conditions of total nuclear war, the alarmist appears to have been correct.

Limited Atomic Employment

Some may doubt that the limited atomic war is feasible, pointing out that there is no sharp delineation between "tactical" and "strategic" which would permit the establishment of acceptable restrictions. Believers recall that similar or even more unusual restrictions have applied down through history. They point to mutual recognition of "open cities," respect for the Geneva Red Cross, mutual restraint in the employment of chemical warfare since World War I, and even to the joint use of Spangler's Spring at Gettysburg by both Confederate and Union forces as concrete examples of unusual restrictions or conditions accepted during war. Again, however, the purpose here is only to consider against this "partial-atomic" war the feasibility of the amphibious assault.

An amphibious force could be mounted at various ports and over-the-beach embarkation points with a phased time schedule. Using widely dispersed areas and backed by a functioning industrial base to fill the logistical needs, the problems of getting the force and its necessary means under way could be solved.

Accepting this premise, the next con-

cern is to examine the ability to move to the objective area. The force could move by diverse routes to predesignated rendezvous areas. There is an accompanying demand that the movement be made as rapidly as possible and it is certain that the slow convoy of past days could not live long if it were to be discovered. Additionally, the movement of one or more convoys would alert the enemy to an impending operation and the slower the movement, the more warning the enemy would have and, therefore, the less chance we would have of gaining surprise which is so necessary. All vessels of the force should be able to move with speeds equal to the escort vessels and fire support ships.

Considering the increased capability of submarines, speed is essential and slowing escort and fire support ships to the speed of the slower vessels could mean early discovery and the sacrifice of all. Finally, to avoid unnecessary and dangerous congestion resulting from the assembly of followup shipping, scheduling would have to be careful and detailed. Given the type of ships required, forward-looking concepts, and a willingness to accept certain calculated risks, a properly conducted amphibious operation could place a significant force in the objective area sufficiently intact to accomplish its assigned purpose. But some change in the *modus operandi* of the past is required.

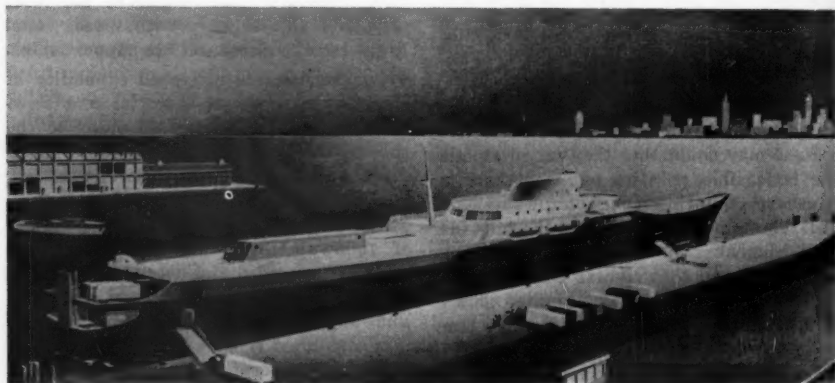
The mass assumes true "criticality" during the ship-to-shore movement on the far side and it is for this period that the most detailed analysis must be accomplished. At this time, when control is difficult at best and a transfer to other modes of transport is being made, the force is most vulnerable. Another matter of vital concern is the fact that atomic weapons can, during this period, destroy significant amounts of critical material and numbers of men simultaneously. It also is the time when the maximum acceptable concentration must be achieved to facilitate control

and efficient employment of transport. And all this must be done at ranges most advantageous to the enemy's atomic delivery means and in areas in which his intelligence is, by mere proximity, best. Landing force objectives probably will be those the enemy can occupy or at least keep under close surveillance.

In the face of these obstacles it might be assumed, superficially, that under this condition of war—one of only tactical employment of atomic weapons—no amphibious assault is practical because of the vulnerability of the force at this critical

launch the required forces. This shift of location also will serve to handicap the enemy's collection effort by spreading it over a more extended area and by placing the area of collection in more remote localities.

Two general areas of thought, planning, and development must be exploited if future amphibious operations are to have the desired characteristics and techniques. One area is that concerning new equipment. The all-weather personnel helicopter and its flying crane brother, the side-loading transport of greater speed, a high-



Roll-on roll-off ship

stage. This, however, is not quite a true statement of the case. The problem is one of reducing the *concentration* required to accomplish the transition from sea to land and/or reducing the *time* required to accomplish this shift of medium to a degree which will make it as difficult as possible for the enemy to gain the knowledge he needs to react.

Equipment Requirements

The first move toward meeting these requirements is to locate the area of transition from one method of transport to the other farther from the enemy so that we may employ a wider arc from which to

speed landing craft, an improved amphibian, and the aerial tramway are but a few of the possible items of hardware that demand attention. (*Beach Operations Under Missiles and Atomics*, by Major Frank B. Case, *Transportation Corp, Military Review*, May 1957.)

Utilization of the helicopter in lieu of landing craft during the assault phase would permit the assault to begin farther out to sea, proceed faster, and to be directed at objectives farther inland, eliminating the requirement for miles of good beaches. This vehicle also would make possible a rapid shifting of forces ashore from one point to another.

Development of a side-loading or roll-on roll-off amphibious vessel and flexible hose leading from tanker to bulk petroleum storage ashore could help accelerate operations to a point where the unloading period could be considered insignificant.

High-speed landing craft—in the 30-knot range—also would reduce the time consumed in ship-to-shore movement or would permit movement from transports positioned farther at sea in much reduced times. Such craft equipped with cable-laying devices could quickly lay communications cable from ship-to-shore to relieve and supplement more vulnerable radio communications.

Improved amphibians could transport personnel, heavier weapons, and supplies well inland, thus avoiding beach congestion, the hallmark of previous operations. The provision of light armor plate on these vehicles would provide some limited protection for personnel.

Aerial tramways coupled with side-loading vessels would permit the rapid unloading and transport inland of large quantities of supplies with minimum personnel in limited time, would tend to eliminate the exacting requirements for beaches and exit roads, and would do away with attendant beach congestion that has been a necessary but undesirable part of amphibious assaults in the past.

Principles of Employment

The other area worthy of concentrated efforts is the realm of ideas—ideas of how to better use equipment now available and to employ advantageously new equipment as it becomes available.

Increased emphasis should be placed upon the conduct of night operations. With the enemy's eyes dimmed and his ears deceived radar guided craft traveling at high speed could land large forces on a hostile beach where, by virtue of surprise and superiority, they could achieve an acceptable dispersion prior to daylight.

Helicopters could be used to accomplish

or complement the night landings conducted over the beach. The admitted problem of control in operations such as those envisioned is a real challenge that can be met by careful preplanning and decentralization of responsibility and authority.

In addition to blinding the enemy and delaying his reaction it would be advantageous to deceive him. Raids, feints, token landings—these and many other devices should be utilized to the maximum to confuse the enemy, loading his intelligence channels with false or misleading information which will contribute toward indecision or delay in decision on his part. Sonic activities, false radar warnings, dummy electronic transmissions, and planted intelligence "tidbits" also could contribute to the enemy's confusion and indecision.

Each landing team should be small yet have the necessary balance and strength of combat and combat support elements to permit the conduct of independent action for a significant period of time. Past concepts that dictated the assumption of control by higher echelons of command upon reaching relatively shallow phase lines would have to be abandoned. These very points or lines of demarcation serve to encourage assembly, and to invite units to hug closely to the beach.

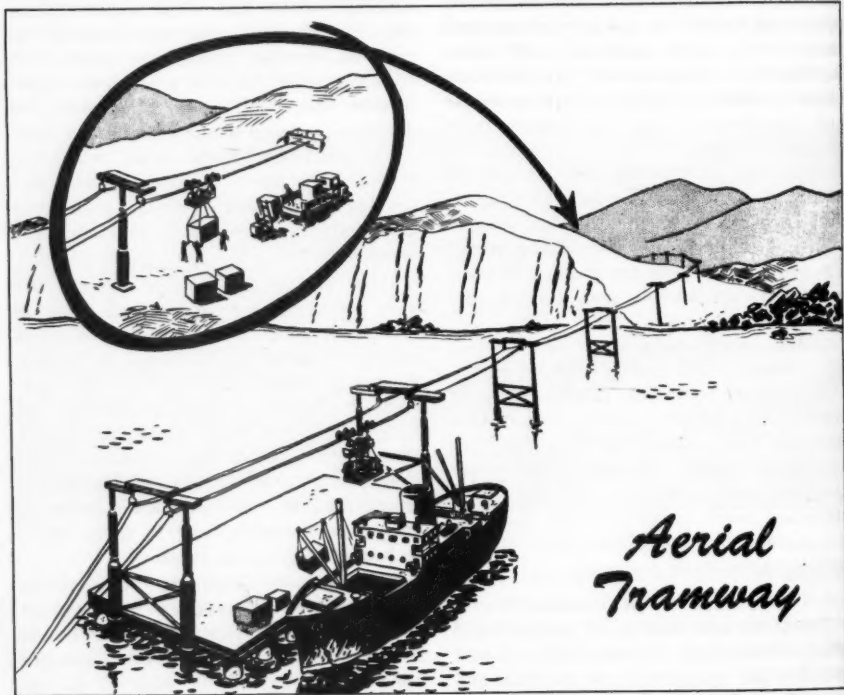
Landing teams landing on separate beaches must be assigned missions designed to promote rapid movement inland to deeper objectives. Such a concept might seem dangerous, but in view of the increased range and potential of fire support means available these forces deep inland could be the eyes and ears for the fire support that would destroy the enemy once located. The selection of objectives far inland would necessitate followup forces to clear the enemy from bypassed areas and permit complete consolidation of the area. Even this consolidation would not be necessary as early as it might seem at first thought.

Helicopters overflying uncleared areas could provide the *immediate* requirements of forward combat units and the niceties must have "long gone by the board" anyway. Emphasis must be placed upon the speed of movement. Objectives seized early should be consolidated rapidly and new ones assigned. Helicopters could add impetus to this type of action by picking up

an immediate atomic attack by his more accurate delivery means.

These are a few of the ideas which, if developed and properly employed, would increase the possibility of success. Additionally, the increased firepower available to landing forces would add to the shock, destruction, and violence of the action.

It is certain that the amphibious opera-



units in one location and rapidly shifting them forward or laterally. Small units might be left to consolidate gains and serve as eyes and ears for fire support means. In this manner the battlefield would take on a fluidity that would make an identification of targets by the enemy more difficult. As forces gain objectives farther inland, they would clear those areas from which the enemy could launch

tion of the past with its characteristic assembly of shipping, its attendant congestion, and its highly centralized control is "dead." It will be "dead" in any instance where atomic weapons are used in a tactical role. However, coupling new matériel developments with the imaginative mind, it is possible to promote a fluid and fast moving type of action that will keep the enemy off balance continually.

Vigorously pursued, this type of action provides certain inherent protection to friendly forces by denying the enemy an opportunity to do anything but "shoot from the hip." It can only be truly successful if the enemy's confusion is exploited to the maximum. But the final result must be the destruction of the enemy in the shortest, most decisive manner possible; the complete control of the initiative; and a complete subjugation of the enemy will to fight. Any type of operation that offers an opportunity to do these things cannot be abandoned completely because of added risks. The challenge lies in trying to find new ways to reduce the risk to a more acceptable degree. No, the alarmist is not quite correct.

An amphibious operation can be conducted in the face of an atomic threat, but it must be done more carefully than ever before because disaster can strike quickly if it is not.

General Nonatomic War

It is necessary to take only a short backward look to determine the efficacy of amphibious operations in a nonatomic war—witness the "island-hopping" in the Pacific Ocean area during World War II and the masterful Inchon invasion of the Korean war. Such operations testify to the fact that without the threat of atomic weapons the amphibious operation of World War II is an excellent pattern for such operations in the future—a tested and proved pattern which has worked before and will work again.

Such a premise is true except for one factor. From now on the threat of atomic attack can never be erased, even though it might appear at a given time that such weapons never will be used. As long as the threat exists the tactician must lay his plans so that they encompass the darkest possibility that presents itself. Hence an amphibious operation under conditions where the atomic weapon has not been em-

ployed still must be one that employs speed, depth of objective, and fluidity of action. Otherwise it will present a pattern that invites the enemy to change from general war without atomic weapons to one that includes all the weapons in the atomic arsenal.

For this reason it appears that the points discussed under a limited atomic war apply also to a general nonatomic war. It is true that there may be a certain amount of tempering, but the basic pattern for nonatomic amphibious operations must be the same as that which offers the greatest opportunity for success in war in which atomic weapons are used.

The Limited War

It is obvious at the outset that from a tactical point of view the limited war varies little from a general war. Political and strategic decisions vary, but the tactical problems do not. As in the case of the general war without atomic weapons, the possession of the capability for amphibious assault enhances the possibility of isolating the action by wide amphibious sweeps, by reinforcing areas with friendly forces quickly, and by shifting forces from point to point as required. It provides an added degree of mobility.

Although today the tendency of many is to couple mobility with airlift, this still is not the most logical way to move large bodies of troops, heavy equipment, and supplies. And it is far from being the cheapest. Airlift gains its distinct value when time is counted in minutes—when a small, light force can do the job quickly. The requirement of large units for significant quantities of supplies over longer periods of time calls for the tonnage carrying capacity of the ship which permits loads to be computed in terms of tons rather than pounds.

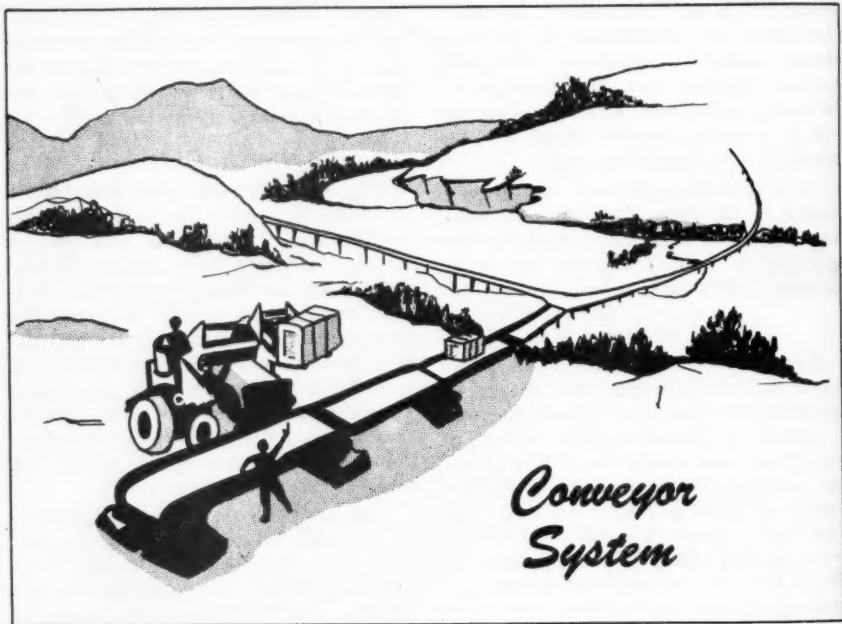
There appears to be little question that all types of ground operations can and will be useful in the "small" war. Again,

the concepts, tactics, and techniques employed must be those adapted to countering the atomic weapon. Never again will the question be, "Can the enemy employ the atomic weapon?" The proper question is, "Will he?" Even though the answer may appear to be "no," there always will exist a shadow of doubt significant enough to dictate that the concepts employed are those that most positively assure success

of protection possible consistent with accomplishment of the assigned mission he has been remiss.

Can we assume that there exists a future for the amphibious operation in the 'small war'? Again the answer appears to be 'yes' and that it falls within that area called 'acceptable risk.'

It has been the intent here to set forth the more significant facts which must be



regardless of what action the enemy may take.

It will make little difference to the commander of a tactical unit attacked by atomic weapons whether it is a little war or big war. Unless he has disposed his forces to best sustain this attack and has anticipated its possibility he can conclude only that his unit has been decimated. If he has not taken the precautions necessary to give his unit the greatest degree

considered in determining whether this age has witnessed the funeral of the amphibious assault. In outlining these facts and some conclusions to be drawn it was necessary to devote the preponderance of emphasis to a consideration of the war in which atomic weapons are employed in a tactical role.

There are several reasons such emphasis is necessary. This type of war presents the greatest number of problems to be

weighed and solved. The second reason is not quite as obvious. It is probable that the initial phase of total war will be followed by a much weakened effort by one side to deliver the final blow to the other. This leads to the assumption that the second phase will be fought by limited forces whose original stocks of large atomic weapons have been expended or destroyed.

The remaining atomic weapons will be those of smaller yield which best lend themselves to use in the tactical role. Hence it appears that destiny may lead armies along diverse but converging routes to the point where the general atomic war and the limited war become, for all tactical purposes, identical. If this is proved true, the contention that there is no future for the amphibious operation in total war might be challenged. However, this requires recognition of the fact that the two phases of such a general atomic war would be so distinctly different that they should be considered separately.

The third reason for emphasizing the consideration of atomic warfare is the fact that the nature of such a war can change easily and rapidly. A single decision—one act of desperation—and the entire character may change. No commander can afford to forget this. If decision is in the hands of rational, reasonable men, moral restraint may make the use of atomic weapons a remote possibility. But cornered and defeated men may lose their moral scruples and start searching for anything which would rescue them from a perilous position.

Recognition of this unknown human quantity leads to the inescapable conclusion that formations employed in the past will not be satisfactory under any condi-

tions of future war. To pass from one form of war to another is as simple as pulling a lanyard or flipping a toggle switch. For this reason, new concepts and equipment are necessary no matter what the type of war. They offer an opportunity to convert an unacceptable risk into an acceptable one; to accomplish the amphibious assault in a more decisive manner in less time.

One outstanding merit of the amphibious capability not previously mentioned is the strategic mobility it provides. If the threat is posed, the enemy must look over his shoulder constantly toward his flanks and rear—to dispose military forces to counter all possible threats or, as an alternative, risk surprise and defeat. To have such a skill in hand and then abandon it does not seem wise. But to pose a realistic threat, the capability must be a true one—not one that is only a figment of the imagination. True capabilities arise only out of tested and established concepts, techniques, material, and trained troops in being. Without these vital elements, amphibious capabilities which lead to a strategic mobility are not true capabilities and the enemy logically can disregard them as idle threats. It follows, therefore, that this method of moving to and establishing contact—by ship over water—cannot be relegated to the past. The requirement to maintain this added degree of strategic mobility decrees otherwise. Instead, it is the task of military men to modify and rejuvenate this skill to a point where it poses a serious threat to the enemy—one he dare not overlook or minimize in all his planning.

On balance, it is concluded that there still is a place in the scheme of war for the amphibious operation, the potency of the atomic weapon notwithstanding.

The Case for Armored Cars

Richard M. Ogorkiewicz

REAPPRAISALS of the military situation in the light of nuclear weapons have emphasized the need for increased battlefield mobility. As one means of obtaining such mobility a reexamination of that once popular piece of equipment, the armored car, is suggested.

Armored cars first gained prominence in World War I. Their performance was such, in fact, that they became an important part of the postwar armies. The British Army, for example, formed as many as 12 independent armored car companies, representing one-half of the total strength of the Royal Tank Corps. Other armies adopted armored cars—although their employment was patterned largely on the French concept of using them as part of the cavalry—to furnish mobile fire support for the mounted units and for long-distance reconnaissance.

The armored car maintained its position in these roles throughout the first postwar decade. By the late twenties and early thirties, however, with the appearance of greatly improved tracked vehicles of the *Carden-Loyd* and *Christie* type it began to lose ground. For example, the armored car companies of the Royal Tank Corps were converted to light tanks and similar changes took place in other armies. The over-all effect was such that during the second decade, preceding World War II, the armored car was relegated to an unimportant position; where it was still used it was confined to the reconnaissance field.

The value of the armored car was rediscovered during the first British-Italian campaign in Libya in 1940-41. The Ger-

mans already had demonstrated this value to some extent during the 1940 French Campaign and the African campaigns of the following two years brought the armored car back into full prominence. Its development and that of other wheeled armored vehicles was undertaken on some scale, not only for reconnaissance and scouting roles but also as combat vehicles with armor and armament comparable to that of contemporary tanks, as self-propelled gun carriages, carriers, and command vehicles.

In the second part of World War II the armored car once again suffered an eclipse. The terrain and the slower tempo of operations in Italy, on the Eastern Front, and in Normandy combined with other factors to push it well into the background. It reemerged in the closing stages of the war but only for a short time, insufficient to reestablish its position even in the reconnaissance field.

Interest Revived

In fact, after World War II, in 1947, the United States Army abandoned the development of armored cars altogether and other armies, at best, showed limited interest in them. In the last few years, however, interest in armored cars and wheeled armored vehicles in general has revived. This has been accompanied by the appearance of several new vehicles such as the British six-wheel *Saracen* personnel carrier and *Saladin* armored car, and the *Ferret* scout car, the French eight-wheel *E.B.R.*, and the Soviet armored personnel carrier.

The reasons for these fluctuations in the

The atomic age emphasizes the need for increased battlefield mobility and suggests a critical reexamination for the immediate and profitable use of the once popular armored car and the wheeled armored vehicle

fortunes of the armored car and the recent revival of interest in it deserve careful consideration.

There were two main reasons for the repeated setbacks suffered by the armored car. One was the general restriction to roads; the other the difficulty of mounting sufficiently powerful armament.

The former was understandable enough as far as the early armored cars were concerned, for they were little more than converted cars or trucks. Even during the 1940-42 revival period the majority of armored cars still was based on commercial vehicle chassis designed for highway operation. It is not surprising, therefore, that their off-the-road performance was poor and their employment restricted to favorable conditions, which could not be relied upon to any extent outside the African theater of operations.

Only a few armored cars, such as the German eight-wheelers and the British *Daimlers*, could be regarded as having been designed properly for military use. These were far less dependent on favorable conditions but, unfortunately, their performance was overshadowed by the indifferent showing of the commercial vehicle chassis models.

The other and more fundamental reason for the failure of the armored cars in the latter part of World War II was the question of armament. This was not a serious problem before, although there was some unnecessary delay in fitting armored cars with adequate armament similar to that

of contemporary tanks. But when tank armament began to move up to high-velocity 75-mm guns and beyond the armored cars could no longer keep pace.

The size and weight of vehicles demanded by the powerful high-velocity guns which came into service during the latter part of World War II were well beyond the possibilities of armored car design. Specifically, to obtain competitive off-the-road performance in this class would have required wheels of prohibitive size. Without these guns, however, armored cars could not face hostile tanks. Thus, because they could not be combined effectively with sufficiently powerful armament, armored cars seemed doomed to insignificance.

Lightweight Weapons

Now, however, this limitation no longer applies in view of the appearance of powerful lightweight weapons—such as recoilless guns and short-range surface-to-surface guided missiles—which do not impose a heavy load on the vehicles from which they are fired. Because of this reduction in weight of armament armored cars once more can be provided with an effective antitank capability and need no longer be confined to a limited reconnaissance function.

Unfortunately, Germany, as one of the leading countries in the development of recoilless guns, was unable to use them effectively before her military work came to a halt in 1945. The United States, on the other hand, has shown no interest in armored cars during the last 10 years. Consequently, the application of recoilless guns to armored cars has been delayed longer than it might and should have been.

Some of the possibilities of recoilless gun armored cars are shown by the jeep-mounted 105- and 106-mm guns which are among the principal antitank weapons of today. However, these installations leave the gunners exposed to stray bullets or shell splinters and leave a good deal to be desired as gun platforms. There is no

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doubt that if these guns were mounted in a suitable wheeled armored chassis, they could be much more effective and such an installation would form a versatile combat vehicle.

A further possibility is offered by anti-tank guided missiles. These are still in their infancy but the French Army already has demonstrated a method of mounting and launching its *S.S.10* mis-

an entire self-contained battle group now could be built on the basis of a suitable wheeled armored vehicle and would combine effective striking power with a very high degree of mobility.

The ability of wheeled armored vehicles to maintain this degree of mobility under a variety of conditions is no longer in question provided they are light enough and properly engineered. During World



The Saracen

siles from light trucks. From these it is only a short step to a wheeled armored vehicle armed with guided missiles which would complement the recoilless gun armored cars and assume the role of a highly mobile tank killer.

In fact, given a suitable wheeled armored vehicle design, a complete multiple weapons system could be based on it, ranging from a carrier for a squad of tommy-gunners to a highly mobile launcher for a medium-range missile. In other words,

War II vehicles such as the German eight-wheelers proved capable of maintaining a high degree of mobility under some of the worst conditions encountered on the Eastern Front in Russia, when many tracked vehicles had considerable difficulty negotiating the mud. Since then much more advanced vehicles such as the French *E.B.R.* have shown themselves capable of competing with the latest tanks in muddy terrain. Under more favorable conditions of dry rolling country or deserts there is no ques-

tion which type of vehicle is more mobile.

In addition, there is the well-established ability of armored car units to cover considerable distances with moderate requirements for fuel and maintenance. During the latter part of World War II, for instance, an Indian cavalry unit equipped with United States built armored cars drove trouble-free from Iraq to Egypt—the type of move which even today no

other types of battle groups. Armored car units also could screen extended fronts and, in addition, bridge some of the existing gap between the tactical capabilities of armored units and the strategic capabilities of airborne battle groups.

In view of this it is not surprising that there should be a revival of interest in armored cars and wheeled armored vehicles in general. Their possible field of applica-



The Ferret

armored unit equipped with tracked vehicles could accomplish without considerable maintenance effort.

Conclusions

All this adds up to a strong case for armored cars which becomes even stronger in the light of the latest operational concepts of dispersed operation in highly mobile self-contained battle groups. Mobile groups equipped with wheeled armored vehicles certainly would be well suited to operate in the inevitable gaps between

tion is wide: an immediate and profitable use of wheeled armored vehicles undoubtedly would be by armored cavalry units for ground reconnaissance, security, and exploitation. In fact, the latest "atomic age" British and French armored divisions already include an armored car regiment for such roles. Armored car units, however, would be equally suitable for numerous other situations in nuclear, brush fire, or cold wars where mobility on the ground is at a premium.

WHAT WILL THE ENEMY TELL YOUR MEN?

Major R. D. Connolly, *Signal Corps*
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THE phrase, "battle for the minds of men," has become a cliché in present-day cold war talk. But will the battle for the mind end if the shooting starts? Or will the enemy propagandist continue his efforts to persuade your men?

These questions are pertinent to any consideration of the morale of a unit, the fighting spirit, and the will to resist which men must have if they are to win in battle.

Looking back to World War II and Korea, we can say safely that the battle for the minds of troops in combat will begin in deadly earnest only when the shooting starts. The enemy propagandist is at work now, in diverse ways and with diverse techniques, to influence the attitudes, opinions, and actions of the American people and the United States military forces. But the soldier does not stand out as an isolated target for propaganda attack now. In time of war, he will.

Three further questions can be asked, therefore, if we accept the premise that the combat soldier will be a primary target for psychological warfare:

1. What will be the purpose of the enemy propagandist in addressing the troops?

2. What will he say to the men?

3. How will he say what he has to say?

The first question can be answered by a study of the propagandist's objectives; the second, by a consideration of his themes; and the third, by examination of his techniques and media.

The objective of enemy propaganda will be to subvert the morale of troops; to start a process of "decomposition" in the unit.

The themes used by the propagandist will vary according to the facts he has about the unit and a visualization of that unit based on his interpretation of the facts available. The themes will be based, however, on such fundamentals as fear, hope, and hate and their opposites, courage, despair, and love. This is an evident simplification but will serve the purpose of establishing a system of classification. An examination of each of these categories will indicate the type of theme that can be devised. Although the leaflets reproduced here are not examples of successful propaganda, they are indications of how themes and techniques may be used by the enemy propagandist.

Fear

Fear can be exploited in many different situations and at many different times. It can be used against a unit moving into the line for the first time; it can be played upon prior to an attack, or when a unit has been cut off from aid. A leaflet or loudspeaker message greeting a unit's arrival on the front is not difficult to prepare and can be effective in that it shows the enemy's knowledge of deployment and his apparent unconcern at such deployment.

Fear, if not present, might be induced by such themes as material superiority, warnings of air attack, bragging of su-

Propaganda can lower the morale of individuals or a unit and soften them for further pressures in captivity unless we strive to build the type of morale that is the pride of well-trained, informed men, ably led

YOUR FAMILIES NEED YOU BACK!

Herein are reproduced two of the numerous letters with physician's or notary public's testimonials from GI's families requesting for discharge from military service. They badly need their husbands to return home.

1. Mrs. Marjorie Hebert's Oath:

To Whom It May Concern:

I, Marjorie Hebert, of R.F.D.#3, Auburn, Maine, do under oath depose and say that I am the wife of Pvt. Sylvio Hebert, ER 11 149 106 Co.B., Repl. Bn., Camp Stoneman, California.

I am eighteen years old. I expect to be confined next month. I am living with my husband's mother, Mrs. Angeline Hebert. Her home is on the outskirts of Auburn, Maine. She works at the Bates Mill from 2:30 P.M. to 12:00 midnight. She is a widow so has to support herself. At present I am receiving no income from my husband so she is supporting me also.

At night I am in the house alone. I have to perform any hard labor such as chopping and carrying wood which is very hard for me in my condition.

Before my husband was called to active duty he was employed as a truck driver earning about \$50 a week and more if he worked overtime. I understand he can have his job back again if discharged.

I am requesting a hardship discharge for my husband so he may return and make a home for me and care for me and the baby after my confinement.

Mrs. Marjorie Hebert

Signed

2. Dr. Russel Perry's Testimonial:

To Whom It May Concern:

Mrs. Hardin F. Franklin, white, age 22 years, 2206 Ashe Street, Durham, N. C. is very nervous. She has one child age 3. Her weight is 97% and her blood pressure is 168/88. She is having to work at the A. & P. Grocery store. Her parents are old and under medical care most of the time. At the present time her father is in Watts hospital for hernia operation and he is the only man in the family at home.

Her husband, Hardin F. Franklin is needed at home very badly. His being away in the Army is causing a severe hardship on his wife and child and other members of her family. This hardship could be greatly relieved by this soldier being separated from the service and returned to his family.

Yours very truly,

D. Russell Perry, M.D.

D. Russell Perry, M.D.

Stop and think! Don't your folks too need you home? You shouldn't disappoint them!

THE CHINESE PEOPLE'S VOLUNTEER FORCES

FIGURE 1.

perior manpower, and demonstrations of enemy confidence in the outcome of the war.

It matters little if there is actual superiority of manpower or material for the enemy propagandist to use as a theme. It is sufficient that his messages make men believe that this is the situation. If his bombers are active on a particular front, then he can exploit this even if it is only a local activity.

Hope

Hope, or the absence of it, is powerful in influencing the thoughts and actions of men. Under this heading the enemy will employ such themes as getting home for Christmas, being taken prisoner instead of dying, the girl left behind, the war will last forever at this rate, and anniversary greetings.

Being good propagandists, the enemy will not build despair to the point where troops will say, "What's the use?" and continue to fight. Rather, he will send over leaflets showing good treatment in prison camps, safe conduct passes, and instructions on how to surrender, offering a way out of the situation.

Hate

Propaganda aimed at dividing elements of a unit or splitting men from their feeling of solidarity with other elements of the national war effort will make use of hate.

Major R. D. Connolly is the author of "The Principles of War and Psywar" which appeared in the March 1957 issue of the MILITARY REVIEW. A graduate of Lafayette College, he did graduate work at Georgetown University, Washington, D. C. He commanded the 88th Infantry Division Signal Company in Italy during World War II. He was a member of the Eighth Army Public Information Office and Press Advisory Division in Korea, and is now an instructor in intelligence and propaganda analysis in the Psychological Warfare Department, The Special Warfare School, at Fort Bragg, North Carolina.

Dislike of distinctions between officers and enlisted men, the civilian warworker making big money back home and dating the girls, big business making huge profits while the soldier dies, the lack of effort by allies, and racial prejudice all will be themes used by the enemy propagandist.

The above briefly will be the bases for main themes used by the enemy propa-

"OLD SOLDIERS NEVER DIE" But YOUNG Ones Do!

BRING OUR BOYS HOME FROM KOREA!!!

MAKE PEACE WITH CHINA!!

AMERICAN PEACE CRUSADE
166 West Washington Street

Reproduction of "confetti" leaflets distributed in Chicago during MacArthur parade.

MacArthur had gone home in safety. How about you soldiers?

According to a Washington UP dispatch of June 29, 1951, the U.S. troop casualties in Korea for past one year both on and without the battlefield included total roughly more than 226,000 men. We hope you will never add your name to the sad list.

THE CHINESE PEOPLE'S VOLUNTEERS' HEADQUARTERS

(這是美國和平十字軍在芝加哥散發的反戰傳單，並說明美軍傷亡慘重。在前線散發給敵方用。)

FIGURE 2.

gandist against combat troops. To get them across he will employ every media he can, including radio, leaflets, loudspeakers, painted slogans on walls of buildings he is forced to evacuate, "letterboxes" set up along patrol routes, and word-of-mouth transmission, to include rumors.

To exploit these themes fully, the enemy propagandist will employ a variety of techniques, such as bandwagon, testi-

monial, cardstacking, insinuation, name-calling, and plain folks, and will vary themes and techniques in order to obtain maximum effect.

The bandwagon technique will appear in propaganda which points out that the enemy is powerful, that resistance is useless, and because the enemy represents a powerful nation it is best to give up and join him.

Prisoners of war will be used to point up good living conditions in prison camps;* newspaper or commentator criticism of the conduct of the war in any manner will be quoted to prove that the enemy is right; even statements by national or military leaders will be lifted from context to supply unwitting testimonial to the enemy cause.

Cardstacking will include picking and choosing among the items which the enemy propagandist will have available so he can present a picture to the troops which will best serve his purposes. He may add up all the inhabitants of his area of control to demonstrate that his manpower is far superior; he may play up a minor victory on his part as a major one, or a minor setback of friendly forces as a devastating defeat. Again, it is not necessary that the situation he depicts be real, it is sufficient for his propaganda purposes that troops believe it is true. Cardstacking is not necessarily lying. It is judicious selection of issues and material to serve the purposes of the propagandist.

Using insinuation, the enemy propagandist will attempt to make troops ask themselves why they are fighting; why certain conditions exist at the front or at home. It will not always be necessary, any more than it was for Mark Anthony, for the enemy propagandist at all times to make a direct attack. He can use certain condi-

tions and the attitude of troops toward those conditions to raise questions as to leadership, war aims, and victory. He can undermine faith in leadership, war aims, and victory and thereby lower the will to fight.

Employing name-calling, the enemy propagandist will depict our war effort as the work of "fascist, capitalist, im-

跟我們走保證你的安全

FOLLOW US! WE GUARANTEE YOUR SAFETY

1. 我們將你送到後方安全的地方去。
We will take you to a safe place in the rear.
2. 在我們的後方有你們成千的伙伴，他們過著安全愉快的生活，到後方後你就可以看到他們。
Thousands of your fellow soldiers are in the rear. They have peace and safety. You will see them soon.
3. 我們志願軍不傷害俘虜，不虐待俘虜，不要俘虜私人的東西，這是我們的紀律。
We Chinese Volunteers do not harm, and do not maltreat war prisoners, nor do we take any of their personal belongings. These are our regulations.
4. 你受傷了嗎？我們有人給你醫治。
If you are wounded, you will get medical treatment.
5. 你可以寫信給你家裏報告你平安的消息。
You will be able to write home and tell your folks you are safe.
6. 我們已經釋放了很多英美俘虜，你們將來也一定得到釋放。
We have already set free many American and British prisoners. You will certainly be freed and get home in the end.

THE CHINESE PEOPLE'S VOLUNTEER FORCES

(發給每一個戰士，備俘虜後用)

FIGURE 3.

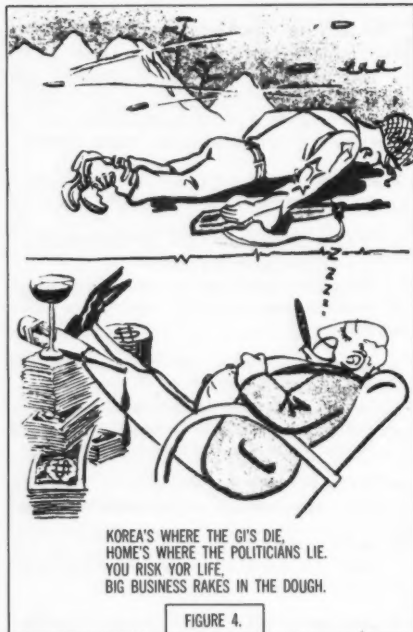
perialist, profiteering, warmongering cliques" with whom the soldier has nothing in common.

By employing the plain folks technique, the enemy propagandist will stress the theme that "all men are brothers"; that both sides have too much in common to continue to fight.

This, in general, is a picture of the pur-

*The use of prisoners of war for obtaining intelligence for propaganda and as propagandists cannot be discussed in this article. So much use can be made of prisoners for propaganda purposes that it would require, and deserves, treatment in a separate article.

pose and means of enemy propaganda in a future war. It is not a picture based on political ideology or a social system. It is not painted in terms of "ism" versus "ism." Vital as propaganda is to the enemy lead-



er, he cannot afford to waste it in an attempt to "sell" his "ism" to his opponents. He has one principal objective in his propaganda: to lower the soldier's battle efficiency. If he accomplishes this, then he may attempt to win them over to his way

of life. (In Korea the indoctrination effort was made on men who had been taken prisoner.)

Because we know the objective, themes, and techniques of the enemy propagandist does not mean that we can assume he will be either successful or unsuccessful. The enemy propagandist must make effective use of his techniques and media in order to get his themes across. In many past operations he has not done so successfully. Many of the leaflets and posters used against our troops in Korea were such that they evoked amusement rather than attitudinal changes or action. However, because past efforts were crude is no reason to believe that future efforts will be. For more than 20 years Communist leaders used propaganda to persuade those under them to a political way of life. When World War II came, Communist propagandists were able to realize that they would be more successful propagandawise if they used other appeals in propaganda aimed at fighting men. Against their own troops and against the German and Japanese enemies, Communist propaganda made its play on the fear, hope, and hate of its audiences.

While propaganda probably will not cause mass defection or even individual surrender, except in extreme circumstances, it can lower the morale of an individual—or a unit—and soften him for further pressures in captivity unless we constantly make every effort to build the kind of morale that is the pride of well-trained, informed men, ably led.

In a war for the minds of men, the enemy's methods can be successfully combated by military training and civilian education. In battle and in captivity the fighting American is no better than his training and education.

Assistant Secretary of the Army Hugh M. Milton, II

LOGISTICAL COORDINATION BETWEEN ALLIED FORCES

Colonel Albert S. Britt, Jr., *Artillery*

Faculty, U. S. Army Artillery and Guided Missile School

FOR the first time in her history the United States is maintaining during a period of peace large military forces both at home and abroad. In addition to the partial mobilization of the military forces, the country also is in a state of partial industrial mobilization. The allies of the United States likewise are mobilized to various degrees, both militarily and economically.

Partial mobilization is expensive; so is military aid to our allies. The American people probably are more conscious and better informed of the cost of the Military Establishment today than at any time in our history. It appears appropriate, therefore, to study the problem of logistical coordination between allied forces at this time.

From our study some lessons should emerge which can be used as a guide for the future. This was the hope of Charles Gates Dawes when he steered the committee in preparing the Report of the Military Board of Allied Supply following World War I. The lessons did emerge from this report, but there is little evidence that they were applied in World War II.

World War I

Before the outbreak of World War I the British and French realized that some coordination between their respective forces was required. A few inconsequen-

tial staff visits took place, but nothing much was accomplished until the war was in progress and the supply situation of the British became perilous. Then the British Minister of Supply went to France to confer with the French Minister of Munitions on how "to secure adequate guns and ammunition for the British Army on the required scale." This meeting started logistical coordination at the top and probably was the first stab at the problem in modern times.

As it became increasingly clear that a supreme commander was necessary, the prime ministers met in Paris to define the terms of office for the commander in chief (CinC), to be. It already had been agreed that he would be a Frenchman. The French produced a draft of the terms of reference which included, without the prior knowledge of General Haig, the British Commander, the following: "... allotment of material and resources to the armies," and "The French Commander in Chief (will have under his orders) the (British) Quartermaster General." As expected, General Haig took immediate and violent exception to his logistical support being placed at the orders of someone else.

The French abortive attempt to strengthen the hand of the CinC in the field of logistics caused Haig to doubt that the French were playing fairly and frankly

The principal obstacles to the coordination of logistics among allies have their roots in finances. In any coalition a central agency, empowered with full authority, is required for solving these problems

with him. Accordingly, he bitterly denounced these terms and threatened to resign unless they were withdrawn. The British Prime Minister, although favorably inclined toward the French view, finally supported Haig. Had this matter been more adroitly handled, it is quite likely that a supreme commander for logistics, whether the CinC or one of his subordinates, might have been adopted.

Later the French proposed the pooling of all material resources, but the British opposed this because their supply situation was critical at the time due to the intense submarine warfare against their shipping. Eventually the British did agree in principle to the pooling of common use items. The British-French Munitions Council allocated these items between the two forces, but there still remained problems, even in such elementary areas as rations. The British ration scale was twice that of the French and Italians; later the Americans further complicated this problem by demanding twice the scale of the British.

On the Eastern Front the Russian armies were bogged down almost from the beginning due to a lack of adequate war matériel reserves, no plan for industrial mobilization, and an inflexible industry that found it difficult to shift to war production. Russia asked for help, but the British and French factories already were

taxed to supply their own forces. In the end, the French did send some considerable supplies to Murmansk, but they arrived too late and remained unused until the Revolution.

It is worth noting that there was coordination between Russia and the Western Allies in the field of strategy, but logistics was overlooked until matters became critical.

By the spring of 1918 the Americans had joined the Allies in agreeing to the appointment of Marshal Foch as commander in chief in the field of strategy. Soon it became urgent that a similar high command be established to deal with allied logistical matters. Accordingly, Brigadier General Dawes, General Pershing's Purchasing Agent, drew up the charter for the Military Board of Allied Supply. The board, which was to "systematize" supply relations between the Allies, became operational the end of May 1918.

Shipping was the key to US participation in the war. As a result of the shipping shortage caused by increased demand and sinkings, the allocation of all ocean shipping space was vested in the Allied Shipping Control Committee. This committee was predominantly British, since most of the shipping was of that origin; and the balance largely of European registry. No US cargo ships were produced in time to be used before the armistice.

To cope with the many supply problems arising out of relationships with the French and British, General Pershing set up a "Coordinating Section" within his general staff for this expressed purpose. This section was the forerunner of the familiar G4 Section of today. Later the entire staff was reorganized into the familiar G1, 2, 3, and 4 Sections because this breakdown more or less paralleled the French bureaus and facilitated work between the two headquarters. This arrangement still required an extensive liaison organization at each staff level and each technical service.

Colonel Albert S. Britt, Jr., commanded the 863d Field Artillery Battalion, 63d Infantry Division, in Europe during World War II. He is a graduate of the Industrial College of the Armed Forces; Armed Forces Staff College; British Army Staff College; the Field Artillery School; and the USA Command and General Staff College. From 1948 to 1951 he was on the faculty of the USA CGSC. He served as Assistant Chief of Staff, G4, and Deputy Chief of Staff for Administration, with Headquarters Seventh Army for a two-year period, and subsequently commanded the 52d Field Artillery Group. He now is assigned as Director, Department of Publications and Nonresident Training, USA Artillery and Guided Missile School, Fort Sill, Oklahoma.

Procurement

Local procurement became a thorny problem since US policies had not been coordinated with the French. After a few trials and errors all procurement amounting to 2,500 francs or more was funneled through the United States Purchasing Board in Paris. This agency coordinated with the Military Board of Allied Supply. Upon approval the request was forwarded to the *Commissariat Général des Affaires de Guerre Franco-Américain*. This agency in the French War Ministry set price ceilings, allocated resources between the French civilian economy and the military, and directed procurement by the appropriate French technical service.

After procurement the French technical service shipped the commodity to the corresponding US technical service and distribution was effected through US channels. A similar procedure was worked out for procurement made in Great Britain.

The extent of foreign procurements in World War I can be seen from a few examples:

1. *Ordnance*.—Over one-half million tons were procured in Europe. The French 75-mm field gun was adopted by the US Army to facilitate interchangeability of weapons, ammunition, and spare parts with the French. All railway guns were of French design. All 8-inch howitzers were of British design and most of British manufacture.

2. *Aircraft*.—Two-thirds of the airplanes of United States air service were of British or French manufacture; all were of European design.

3. *Tanks*.—The US tank corps was dependent entirely upon France and Great Britain for tanks. Although US tank production was initiated before the armistice, none were received in Europe up to that time.

Coordination with the French was necessarily very close in the field of transportation. As a result of this experience the United States Army adopted the French

procedures for rail traffic regulation. In general these procedures survive to this day. The Americans also learned how to regulate motor transport from the Allies. Foch had a large international motor pool established to move the strategic reserve. The American contribution to this pool amounted to 8,000 trucks complete with drivers, mechanics, and maintenance facilities.

Germany and her allies had similar problems in the logistical field. However, there was greater central direction to their combined effort than among the allies. German divisions and munitions skillfully were used to coerce or reinforce her allies. These measures held together the German alliance right up to the end; otherwise Bulgaria and Austria would have sought a separate armistice.

It is interesting to note that the French member of the Military Board of Allied Supply attributed the Allied victory to the work of the board, and the defeat of the Germans to their inflexibility in organizing their logistics. Unfortunately, he offers nothing to substantiate his statement.

World War II

When the United States entered World War II, a few of the World War I problems and pitfalls in logistical coordination were avoided. The British were, as ever, skilled in the conduct of coalition warfare, and since they were the principal ally of the United States, progress in coordination went forward more smoothly than in World War I. Experiences from that war had been studied in the service schools and colleges of both countries.

The pattern for the command structure for US forces in Europe, both strategic and logistical, was taken from World War I experience. Indeed, the terms of reference for both Generals Eisenhower and Lee were drafted from the Letters of Instruction to General Pershing in 1917 and 1918.

As American troops built up in the

United Kingdom, the British undertook a 700 million-dollar construction program to provide housing and other accommodations for these troops. The funds for this construction were provided by the British, and constituted a reverse lend-lease contribution.

As time went on both British and American authorities became annoyed with each other over the construction program. The Americans were impatient at the bureaucratic red tape and the general lack of urgency in getting on with the job, while the British were irked at the Americans for continually changing their plans.

In spite of the annoyances on both sides, one must admit that the preparations made by the British for their Allies were certainly noteworthy; particularly so as the effort was made at a time when their limited resources already were strained.

In addition to this example of lend-lease, during 1942 one-third of all tonnage required by US forces in the United Kingdom was provided by the British. For the Fiscal Year 1943, for example, 50 percent of all supplies and equipment for the United States Air Force in Great Britain was furnished from British sources. In addition, up to the Normandy landing, 63 percent of all quartermaster supplies came from the British.

Some measure of the extent of reciprocal aid, or reverse lend-lease, as it is referred to generally in the United States, which resulted largely from logistical coordination with the British, can be seen from the total of the British contribution: seven billion dollars. This compares with about 30 billion dollars which the United States contributed to Great Britain.

As General Eisenhower stated in his Final Report to the Combined Chiefs of Staff:

The United States of America and Great Britain have worked, not merely as allies, but as one nation, pooling resources of men and material alike in this struggle

against the forces of evil engendered by Hitler's Germany.

The coordination of logistics in this combined force was facilitated by having a completely integrated combined staff for the supreme commander. This staff developed under the direction of General Morgan, British Army, who was charged with organizing and planning for the invasion of the Continent before a supreme commander was appointed.

In the Southeast Asia theater Admiral Louis Mountbatten had a predominantly British force, although there were sizable contingents of American troops there. He recognized the necessity for a partially combined staff to ensure coordination between British and American troops. Notable examples were in the fields of medicine and aerial supply.

German-Italian Supply

German-Italian experience paralleled that of the Allies in some respects. Their problems in maintaining Rommel's troops in Africa have been recounted in numerous works since the end of the campaign. According to Rommel the principal supply problem can be attributed directly to a lack of coordination and cooperation on the part of the Italians. Although the bulk of the supplies for the *Afrika Korps* were German in origin, the line of communications through which these supplies had to move was Italian. North Africa was an Italian theater of war and the over-all responsibility for the conduct of operations was vested in the Italian-African command.

It appears that it was not Hitler's intention to become involved in Africa. After the collapse of Graziani's armies, the Germans were compelled to help out for fear their partner might quit. Rommel, thereupon, was sent to Africa with two divisions to assist ("bolster" might be a better word) the Italians. In this role he became subordinate to Graziani's successor, General Bastico, CinC Italian-Africa

command. As a consequence the Germans were dependent upon the Italians for logistical support in the field. Base service, depot supply, and higher echelon maintenance were all Italian, with a sprinkling of German technicians.

Rommel reported time and again that this arrangement was unsatisfactory, and he attributed his defeat largely to the unsatisfactory supply situation.

In principle the supply of forces in the Axis was a national responsibility, similar to the policies of the Allies. In part, the North African theater was a departure from this principle. In this case a major force of one country became dependent for logistical support upon another, and weaker, nation.

Needless to say, German-Italian war planning had not taken logistics into account. Apparently there was very little coordination between the two countries in the field of industrial mobilization and general logistical planning. No attempt was made to standardize arms or equipment, nor coordinate the production of items which could be standardized. Some effort was made in the later stages of the war to send German technicians to Italy to assist in producing certain types of war material with which the Italians were unfamiliar; but even this was on an ineffectual scale. When it became urgent that the Germans give the Italians some logistical help, the solution generally was to produce the item in Germany and send it to the Italians. Specialists and technicians frequently accompanied the item to assist in the installation and training of the users.

After the loss of the North African Campaign, the Italians became more and more dependent upon Germany for logistical support, even in Italy.

Korea

The logistic support policy for the various national elements of the United Nations Command, including the South Ko-

reans, was that each nation assume responsibility for the logistic support of its own forces. Support in kind obviously was infeasible for many of the contingents; in these cases the United States furnished the supplies and equipment on a reimbursable basis. In other instances, US equipment was issued as an expedient and the bookkeeping was done later.

Many special problems new to Americans arose in the supply of forces from many lands in the course of operations in Korea.

The Abyssinian force was equipped with every make rifle they could obtain. It soon became necessary to issue US arms in order to maintain ammunition supply. The problem then really became acute when it was learned that the Ethiopian custom required that a warrior return home with the same weapon with which he departed, else it was an indication of personal defeat!

Rations for the Moslems created a problem when the Turks arrived in Korea. Their religion prohibited the eating of pork, a common ingredient of the "C" ration. This problem eventually was solved through the cooperation of the Moslem religious leaders who granted a dispensation to the Turks fighting in Korea.

The customary practice of ration issue in the Korean Army varied from US practice and led to some confusion in the beginning of the campaign. The Korean ration is divided into a staple portion which is issued, and a fresh portion for which a monetary allowance is given to the commander for local purchase. Obviously, this could not go on during combat. Yet the only ration available was the United States "C" ration which soon proved too large in both quantity and type. Furthermore, this ration cost \$2.00 at the time, compared with the few cents which the Korean ration cost. This problem was solved by procuring in Japan an oriental type of "C" ration catered especially for the Korean appetite.

A further problem arose with the Koreans in regard to combat boots. The tariff sizes issued by the US Quartermaster are based upon the average sizes of American feet and clearly were too generous for the Koreans. This problem was solved by instituting a "boot cut-down" project in Japan for the Koreans.

At considerable effort and expense the US Quartermaster provided live lambs to the Greek contingent for a religious rite, only to find that the lambs were not entirely suitable, as they should all have been female lambs.

NATO

From the outset logistics have been an important consideration of the supreme commander of NATO forces.

In his first and last report as supreme commander of NATO forces, General Eisenhower called attention to the fact that the United States had provided most of the resources for NATO up to the spring of 1952, the date of the report. However, he continued, the American taxpayer should not be expected to continue carrying the load indefinitely unless other nations showed cooperation and enterprise in improving their own defenses.

In a subsequent report of the supreme commander, attention was called to the fact that improvement had been substantial, but there still remained considerable room for improvement. This was apparent from a remark to the effect that the principle of national responsibility for logistical support resulted in a lack of flexibility within his command and that he had made proposals for overcoming this rigidity. Presumably some of the allies had not adequately supplied their part of support for their forces. Under these circumstances the supreme commander apparently felt that in the absence of any other recourse he was compelled to seek authority to supply the delinquents out of resources on hand in other national forces. This is certainly treading on tricky ground.

If the foregoing presumption is correct, it is difficult to see how the cross transfer of supplies could work out satisfactorily in practice. To focus on a specific case, among the forces of SHAPE, US forces probably are the most adequately supplied. Adjacent to the American forces are the French who are practically at home, while the Americans are at the end of a 4,000-mile pipeline. The French can afford to have less stockage than US forces. If the resources are then pooled, US forces will be placed in a very tenuous position.

It is understandable that the supreme commander, or any other commander for that matter, must realize that the command as a whole is only so strong as the weakest link. If he can strengthen that link, he must surely do so.

A better solution than cross-servicing would seem to be the provision of logistical support through channels other than the battlefield distribution system such as lend-lease and the Mutual Defense Assistance Program. In effect, this was the procedure followed in Korea.

The military burden for each country in NATO was determined by a team under the International Secretary, Lord Ismay, and agreed to by member nations. There should, therefore, be no real necessity for cross-servicing or pooling if each nation does its bit.

The financial responsibility for large-scale undertakings which comprise the infrastructure is prorated among the various member nations through agreements at ministerial level. The United States has underwritten a large part of the total cost to date.

A rather novel feature in the buildup of NATO forces has been the effort placed upon developing a European Arms Production Base to support the logistical requirement. The most recent addition, of course, is the phenomenal German industrial machine. Originally, the rearmed German forces were to receive their base logistical support and heavy war equip-

ment from allied sources. This now is changed, and one can expect that a strong arms production base will develop in Germany.

Under the NATO Defense Production Board a survey of defense production capabilities was made for the purpose of coordinating war production. Mr. Herrod, the distinguished Englishman who headed the board, made two observations regarding the use of European factories for war production at that time (1951). First, price fixing was essential to ensure coordinated procurement, and second, many of the factories would require "financial stimulus" to get them into arms production. The necessary stimulation has come about through the United States Offshore Procurement Program. With that start, production appears to be well in hand.

Summary.

Logistical coordination between allies obviously is influenced by the way in which the various members of the alliance operate. General Morgan in his book, *Overture to Overlord*, concluded that United States and British procedures for administration were so irreconcilably opposite that he charged his administration section with keeping the two systems "as severely apart as possible." However, his administrative section, staffed with both British and American officers, did coordinate all administrative (in British parlance the term includes logistics) planning for *Overlord* in the early stages.

The US press had coined descriptive terms to differentiate between nations which are considered rich or poor, the "have's" and the "have not's." Without question, this is a basic factor. It follows then that one's allies will require logistical help according to whether they are "have's" or "have not's." During World War II the Free French Forces lost their homeland, and with it the capability for supporting their forces from French resources. As a result they were almost

completely dependent upon the Americans and British for logistical support. This was the reverse of the situation in World War I when the United States forces were almost equally dependent upon the European Allies.

In World War I the Russians made the mistake of bringing Romania into the war without first finding out that the Romanian Army would be almost a complete logistical liability to the Russians. Romania had no war reserves and no means for producing them. Consequently, she looked to Russia for even the initial issue of arms to her reservists. Sorely lacking in equipment, Russia now found herself bound to share with her new ally. In the end, Russia sent troops to operate under the Romanian High Command, rather than equipment she could secure only by withdrawing from her own soldiers. Even the most casual coordination of logistical matters between the two countries would have disclosed that the Romanians would have been more valuable, indeed more willing, as neutrals than the logistical burden they turned out to be.

Our public officials seem to have left little doubt that requirements of the allies which cannot be met from abroad will of necessity become demands upon the United States during war. Since so many of the allies require assistance from the United States during peacetime, so much more so will they be dependent if war should break out. For the foreseeable future no major power could become involved in all-out war with the Soviet bloc without major logistical support from the United States.

Thus the "have" nations of any coalition will be called on for logistical help by the "have not" nations. Many of the misunderstandings between the allies stem from this basic factor, and the fact that so many nations are in the "have not" category.

The program through which our allies are receiving logistical help today was

established by the Mutual Defense Assistance Pacts.

In effect, the MDAP's continue the principle of US military aid to allies just about where lend-lease left off at the end of World War II. It also is a companion to Marshall plan type aid, in an economic sense. The underwriting of military equipment and offshore procurement of military supplies are the means by which the United States is aiding the allies in the general field of logistics. The over-all plan in Europe is coordinated by the Supreme Allied Commander Europe (SACEUR), who also is the NATO Supreme Commander, through the various Military Assistance Advisory Groups. This dual relationship of SACEUR ensures a certain amount of coordination and gives some assurance that the aid is related to the over-all objectives of the United States.

Some of the allies do not have the industrial base for the production of their arms and equipment. Offshore procurement is intended to build up a production base in Europe so that the NATO countries will be able to produce their own arms.

This has brought about a requirement for the standardization of equipment which, in turn, requires standardization of terms.

Clearly, standardization of equipment must precede any large-scale standardization of organization, tactics, or logistical procedures. It also must precede any effective pooling of supplies. In some cases it may not be desirable to standardize. For example, cases have been cited where pooling of rations was not feasible because of the difference in standards.

During World War I the French and Americans successfully pooled ammunition. On the other hand, attempts at pooling between the French and British were not so successful, largely because the equipment was not standardized.

Much has been accomplished recently in the field of standardization, but it is doubt-

ful if much more can be achieved profitably for the time being. One sure way to standardize equipment is to make gratuitous issues to one's allies.

Overemphasis on standardization can nullify the strength of customs and traditions. There are times when these matters are more militarily valuable than standardization. It is necessary to guard against the zealot who sometimes appears to push standardization for standardization's sake rather than the achievement of military effectiveness.

A coalition engenders a certain amount of distrust among the members. Napoleon is alleged to have said that he could defeat any coalition because of the indecision and diverse interests of the allies. He was right except for a couple of times. Nevertheless, there is great merit in Napoleon's thesis.

An example from World War I illustrates the lack of confidence between Allies: The Germans made great gains in the spring offensive of 1916, and it seemed probable that the Allied positions would be penetrated. At one and the same time, the French secretly were planning a withdrawal toward Paris which would have uncovered the British right flank; and the British were considering a withdrawal which would cover their evacuation ports on the channel, thus leaving the French left flank uncovered. Fortunately, neither plan had to be put into effect.

The problems inherent in the coordination of logistics among allies of different language are so patent as to not require emphasis. Even though highly skilled interpreters and liaison personnel are employed, as with the French in World War I, it is quite difficult to find common grounds for a thorough understanding. All agreements involving logistics also involve money in the final analysis and must be recorded in precise language to avoid as many misunderstandings as possible.

If the ally is impecunious and mutual agreements are not precise, it can be ex-

pected that he will take advantage of every opportunity to escape commitments; this may not necessarily appear dishonest to him.

The command structure of a coalition affects logistical coordination in an allied force.

The supreme commander of an allied force normally exercises only operational control of the forces in his command. Nevertheless, he must concern himself with the state of logistical support for these forces to ensure that they can fulfill the missions assigned.

Whether we like it or not, each nation has certain national characteristics which distinguish it from other nations. These characteristics play, at times, a decisive part in military operations within a coalition.

In this regard it is worth noting the comment of a well-informed German general of World War II regarding the characteristics of various nationalities when working together as allies. His views were that the British are trained to operate in a coalition. These matters are studied in their service schools and from long tradition they are psychologically and emotionally adapted to the problems which arise. He felt the Germans were too impatient and the French too arbitrary. The Americans he felt were a mixture of the French and German attitudes. He also noted that the British were very tolerant of their allies, a characteristic not enjoyed by the others.

Like national characteristics, each nation has standards and customs of its own.

Conclusions

From this study of coalition logistics, certain conclusions emerge which should form the guidelines for logistical coordi-

nation between allied forces in future wars, both hot and cold. Most of these conclusions stem from human motives and reactions; therefore, they should be as valid for nuclear warfare as for conventional.

1. The principal obstacles to the coordination of logistics among allies have their roots in finances. Generally speaking, the more impecunious the ally, the more difficult the solution to the problem, unless resort is made to grants.

2. The problems are not by any means confined to relationships between the United States and her allies. In two wars the Germans have faced similar problems.

3. The British handling of the problem has won the respect of friend and foe alike. One would conclude that their methods warrant study.

4. Some over-all authority, other than a committee, is essential for the coordination of logistics in a coalition. Because of the financial implications, it certainly will be difficult to secure the necessary delegation of authority.

5. Lack of proper coordination can spell disaster, as Rommel found out in the North African Campaign.

6. It seems risky to commit combat reserves for cross-servicing, unless the stockages reflect a cross-servicing requirement.

7. Some form of military aid such as lend-lease or MDAP seems better than cross-servicing in the combat area.

8. The good will of allies can be lost easily at the same time that valuable aid is being given if due consideration is not given to the customs and standards of allies.

9. Standardization is a prerequisite for broad pooling of resources.

MR. CALHOUN'S ARMY

First Lieutenant Vincent J. Fisher, *Retired*

THE years immediately following the War of 1812 were peacetime years for the United States and while military activities have been publicized little, it was between 1817 and 1825 that President Monroe's young Secretary of War instituted organizational changes that were to have a lasting effect upon the Army of the young Nation. It has been necessary to do a considerable amount of interpretation to translate line and staff organizational concepts of the early 19th century into a form familiar to the present military reader.

The New Secretary

It was late in the year 1817 before the newly inaugurated President, James Monroe, found a man willing to undertake the task of heading the War Department. In the interim the chief clerk supervised the affairs of the department. In this period following the War of 1812 the position of Secretary of War was not considered a politically promising one. Indeed, the War Department still had 45 million dollars in unsettled debts, and the turmoil in the Army from the postwar reorganization had not yet subsided. So great was the confusion within the Army that on 22 April 1817 Major General Andrew Jackson, Commanding General of the Division of the South, issued an order prohibiting any officer in his command from obeying any War Department directive which had not first passed through his headquarters.

Small wonder that three men, among them Henry Clay, had rejected Monroe's offer of the post. The President finally settled upon a talented young South Carolina Congressman, John C. Calhoun who assumed his duties on 6 December 1817. Aside from his service in Congress during the War of 1812, and his ability for hard work, Calhoun appeared to have little to qualify him for the job. He was only 35 years old and had no military experience. Nevertheless, he had in the past been an advocate of a sensible military policy.

The General Staff in 1818

The War Department General Staff (WDGS) Calhoun inherited was set up by the Military Peace Establishment Act of 1815 and was reorganized by Congress in 1816. Then, as now, there was no Commanding General of the Army. The two senior officers of the Army, Major Generals Andrew Jackson and Jacob Brown, commanded the Divisions of the South and North respectively, and exercised no control over the WDGS. In practice, then, the WDGS functioned directly under the Secretary of War.

The Secretary was his own staff coordinator since there was no such post as chief of staff. The department did have a chief clerk, a civilian, who could relieve the Secretary of some administrative burden, but staff coordination was not one of his functions.

It is regrettable that Calhoun is remembered by most of his countrymen for his championship of the southern cause of States rights and that his excellent service as Secretary of War is largely forgotten

Staff organization was, at best, a sketchy thing at this time, and the authority of the Secretary to organize and reorganize staff sections was limited somewhat by the fact that Congress provided for only such bureaus and staff personnel as it, and not the Secretary, deemed necessary. All too often economy, rather than sound organizational concepts, dictated their choice of bureaus. Nevertheless, Calhoun in 1818 persuaded Congress to enact legislation setting up a WDGS with bureau heads in Washington to ensure centralized control of the Army.

According to modern staff concepts, one can consider that there were two types of staff officers at that time—heads of services having under them troops serving with divisions, and heads of bureaus commanding no troops. There were five bureau heads: the Adjutant and Inspector General, the Paymaster General, the Quartermaster General, the Commissary General of Purchases, and the Commissary General of Subsistence; and three heads of services: the Chief of Ordnance, the Chief Engineer, and the Surgeon General. (See Figure 1.) This latter post was not established until April 1818. Since 1815 the senior officer of the Medical Department had been the Apothecary General who apparently was more of a supply officer than a senior physician.

The Adjutant and Inspector General was responsible for the publication of all department orders and, theoretically, for the coordination of the activities of an As-

sistant Adjutant General and an Assistant Inspector General on each division staff. The Paymaster General kept the pay accounts for the Army and supervised the bimonthly payment of troops by subordinate paymasters serving with each regiment and battalion in service.

The method of securing supplies prior to 1818 had been for Army units to report their needs individually to the Treasury Department which would then contract with a civilian merchant for the merchandise. Calhoun quickly realized that this was an inefficient system, and that it was impractical in time of war. He desired that the WDGS be the coordinating body for the Army both in peace and war, and this included the supply system. Accordingly, in 1818 Congress at his request set up three Army supply bureaus which would do their own coordination of supply requisitions and their own contracting. This same law of 1818 made the hitherto independent supply personnel on the division staff subject to the control of the appropriate bureau heads on the WDGS.

The functions of the Quartermaster Department were the quartering and transporting of troops, opening and repairing roads, the purchase of horses and wagons, storing of supplies, and issuing fuel and forage. The Quartermaster General was assisted by two deputies and 12 assistants to be assigned where they could best accomplish their duties.

The Purchasing Department was responsible for securing all clothing and equipment for the Army except those items designated to be purchased by other supply departments. The bureau consisted of a Commissary General of Purchases, two deputies, six Commissaries of Issue, and an indefinite number of military storekeepers, all of whom were usually civilians.

The final supply bureau was the Subsistence Department which was charged

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with requisitioning and receiving all subsistence supplies. The department was headed by the Commissary General of Subsistence, in the grade of colonel of ordnance. His assistants were detailed from the line units for temporary duty.

This was a particularly prevalent evil of the day. By detailing officers from line organizations to staff posts, while still carrying these officers on the rosters of the line units, the lawmakers could save the expense of commissioning additional officers. But, if a war were to break out, the trained staff officer must either return to the line and be replaced by an inexperienced staff officer, or remain on the staff and have an unskilled officer fill his place in the line unit.

Reorganization

Scarcely had Calhoun taken office when Congress, in April 1818, directed him to report on the possibility of reducing the Army. The Secretary in his reply stated that the Army could not safely be reduced below the strength then authorized, nor could the number of line officers be diminished in proportion to the number of enlisted men.

Congress was restrained for a time, but in 1820 it left the Secretary no alternative when it directed him to report on a plan for reducing the Army to 6,000 enlisted men. Calhoun's reply ranks among his finest papers on the Military Establishment. He proposed little change in the General Staff, and recommended the retention of a sizable number of ranks in the Army to make the future of any officer attractive enough for the "people of talent and respectability to enter and continue in the military service." Reduction of the number of high-ranking officers he pointed out to be foolish economy. Calhoun planned for a flexible Army with the same number of Regular regiments in a crisis as in peacetime. Additional men could be enlisted in these regiments to increase

them to a full wartime strength of 19,000 officers and men. With this core of Regular regiments he hoped to make more efficient use of the militia and volunteers. Calhoun concluded his paper with the observation that peacetime economy which renders a Military Establishment unfit for the accomplishment of its wartime tasks is truly false economy.

The General Staff After 1821

The act of reorganization provided for only one major general in the Army. Jackson resigned, leaving Brown with the newly established post of Commanding General of the Army.

Because the purpose of the reorganization was economy and not operational change, the structure of the WDGS suffered little, but the number of personnel assigned to it was reduced substantially. The three chiefs of services were retained in grade. Neither the missions of the three supply bureaus nor the grades of the chiefs were altered. One peculiarity of this piece of legislation was that 10 Assistant Quartermasters and 50 Assistant Commissaries of Subsistence were authorized, all 60 being subject to the orders of both bureau heads. This dual control quite likely was a source of considerable confusion and ill feeling.

Of the two bureaus concerned with administration, the Pay Department was least affected. However, the old Adjutant and Inspector General's Department was abolished and replaced by the Adjutant General's Department. The Adjutant General was given the grade of colonel of cavalry. He was assisted by two Assistant Adjutants General, detailed from the line, who were also to act as aides-de-camp to the brigade commanders. Two Inspectors General were authorized, with the grade of colonel of cavalry, to function directly under the Secretary of War, submitting to him semiannual reports.

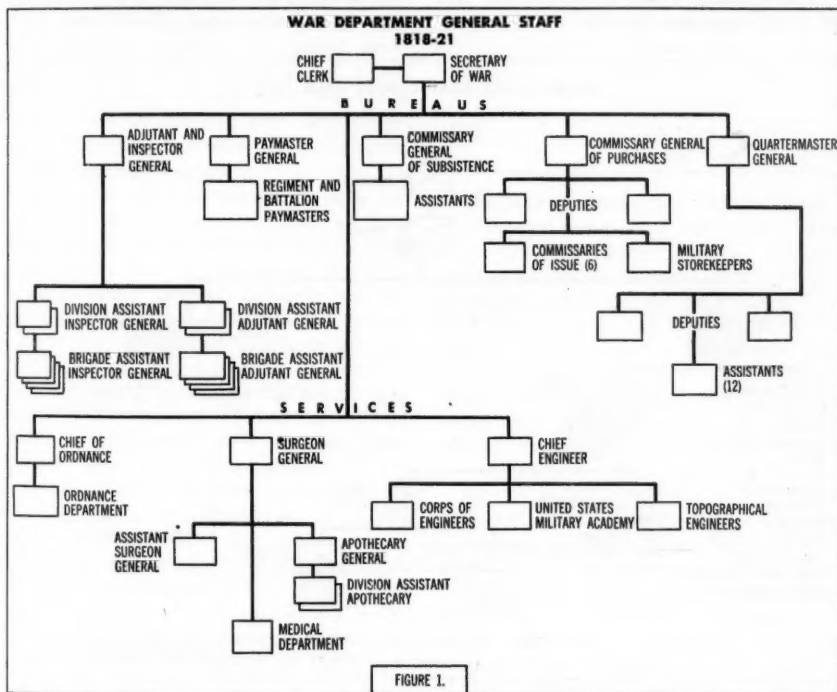
The aforementioned colonels of cavalry,

plus two Quartermasters given the grade of majors of cavalry, were the closest the Army of this era came to having cavalry. Not so much as one mounted troop was authorized by the laws of 1815 and 1821.

Further Accomplishments

During Calhoun's tenure of office the Army engaged in only two campaigns of

By 1825 he succeeded in having an Artillery School for Practice established at Fortress Monroe, Virginia. The artillery companies (the word "battery" did not have the same meaning as it does today) manning the post were 10 in number, detached from the artillery regiments and periodically rotated, thus allowing all companies to benefit from the instruction. It



any consequence. One, the Seminole War of 1818, secured Florida for the United States, and the other was an expedition against the Arikaree Indians undertaken in 1823. Neither affected the organization of the Army to any degree.

Calhoun was quite interested in providing continuous instruction for Army officers during the course of their careers.

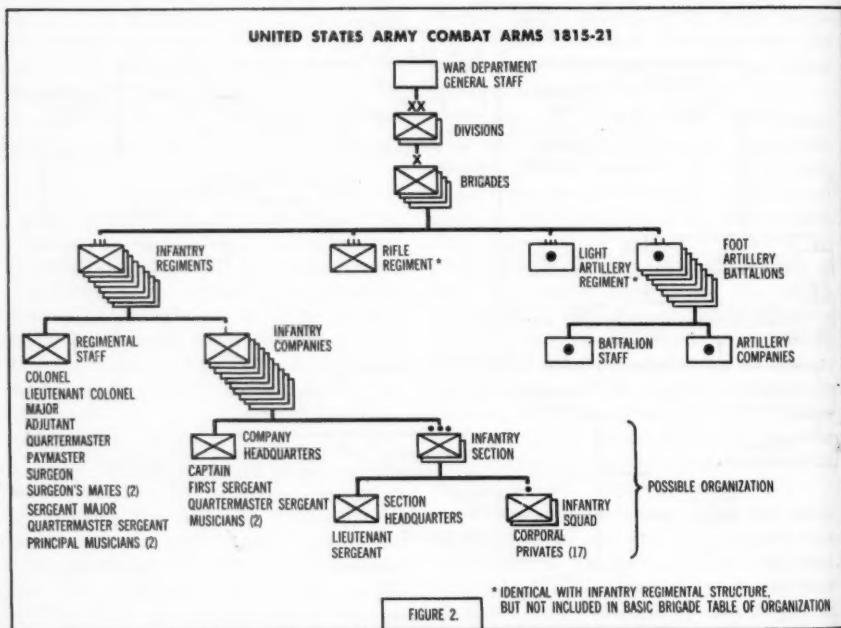
was planned to assign all new USMA graduates commissioned in the Artillery to the school to receive one year of instruction.

By the time he resigned in 1825 to become Vice President Calhoun had reduced the Army's annual expenditures from \$8,004,237 to \$3,340,940. More important still he had cut the unpaid accounts of

the War Department from 45 million to 4 million dollars. One cannot doubt that Secretary Calhoun's wise administration, conscientious leadership, and careful supervision of his subordinates were far more important than congressional penny-pinching in achieving this reduction in Army expenses and was far less damaging to the national interests.

The Military Peace Establishment Act of 1815 restricted the size of the Army

tinental armies of today in that they were responsible for a given sector of the United States and embraced all troops stationed within that sector. They did possess a basic table of organization with respect to infantry and foot artillery, with each division consisting of two brigades of infantry and four battalions of foot artillery. An infantry brigade was made up of two regiments of infantry and was commanded by a brigadier general. (See Figure 2.)



to "... in the whole, 10,000 men, as the President of the United States shall judge proper, and that the Corps of Engineers, as at present established, be retained." President Monroe interpreted this to mean 10,000 enlisted men exclusive of noncommissioned officers and musicians. Consequently, the strength of the Army was set at 679 officers and 11,709 enlisted men.

The divisions were similar to the con-

The infantry and rifle regiments were identical in structure, except that the principal weapon of the rifle regiment was the rifle instead of the musket. Each regiment consisted of a regimental staff and 10 line companies. The colonel commanding had a staff of eight officers and four enlisted men. Although there were no battalions provided for, regimental commanders frequently formed them pro-

visionally under the command of their two field grade officers. Each company consisted of three officers and 78 enlisted men. No table of organization was provided for the company. There were eight such infantry regiments, designated the 1st through the 8th, and one rifle regiment.

The artillery was composed of one regiment of light artillery and eight battalions of foot artillery. The staff of the light artillery regiment was almost identical with the infantry regimental staff. The strength of a company, of which there were 10 in the regiment, was three officers and 78 enlisted men. Each company was able to service six smoothbore, muzzle-loading cannon.

The foot artillery battalions were responsible for servicing the guns of fixed installations. Four such battalions were assigned to each division, and they were designated as the 1st through the 4th within that division. A lieutenant colonel or a major commanded each battalion, assisted by an Adjutant and a Quartermaster. Each battalion contained four companies of five officers and 118 enlisted men. Companies of each division were lettered from A to Q (excluding J) regardless of their battalion assignment.

Assigned to the Corps of Engineers were 22 officers and 113 enlisted men, excluding the Topographical Engineers and the complement of the USMA. The Chief Engineer was authorized the grade of colonel. In addition to commanding the engineer troops he supervised the Topographical Engineers and the Military Academy. The former bureau was made up of six topographical engineers and four assistants, and was charged with conducting surveys and preparing maps. At the time the Military Academy was authorized 10 instructors and 250 cadets. The administration of the academy was assigned to an officer of the Corps of Engineers, Major Sylvanus Thayer. The Ordnance Department was commanded by a

colonel, Chief of Ordnance. He had 43 officers authorized, and on December 1817 there were 296 enlisted men. It is to be noted that the Artillery and Ordnance Departments were authorized third lieutenants, a grade that was eliminated in 1821.

January 1817	— 10,024 officers and enlisted men
End of 1817	— 8,111 officers and enlisted men
1818	— 7,676 officers and enlisted men
1820	— 10,194 officers and enlisted men

The Medical Department was without a professional commander until April 1818, when Congress authorized the appointment of a Surgeon General and an Assistant Surgeon General. An Apothecary General and two assistants, responsible for medical supplies, had already been provided. By this same act of April 1818 an additional 20 surgeons and surgeon's mates were authorized for each division. The allocation of medical officers to regimental staffs is shown in Figure 2.

After Calhoun's staff reorganization in 1818 the division staffs were composed of a major general commanding, an Adjutant General, an Inspector General, three Commissaries of Issue, five Topographical Engineers, an Assistant Apothecary, a Judge Advocate, a Chaplain, and two aides-de-camp. Assigned to the Division of the North in 1817 were the 2d, 3d, 5th, and 6th Regiments of Infantry, the Regiment of Light Artillery, four battalions of foot artillery, four companies of the rifle regiment, and the Corps of Engineers, which was garrisoned at West Point. In General Jackson's Division of the South were the 1st, 4th, 7th, and 8th Regiments of Infantry, four companies of foot artillery and the headquarters and remaining six companies of the rifle regiment.

Contrasted with the authorized strength of 12,388 officers and enlisted men are the actual reported strengths listed above.

1821 to 1825

The reorganization of 1821 eliminated the rifle regiment and one infantry regiment. The infantry regimental staff was reduced to four officers and four enlisted men. The 10 line companies were each authorized three officers and 49 enlisted men.

The Artillery and Ordnance Departments were drastically reorganized. Although the Chief of Ordnance was retained on the WDGS, his department was merged with the artillery. One supernumerary captain was to be detailed for ordnance duty with each artillery regiment, and a total of 56 enlisted men were given an ordnance assignment.

Four artillery regiments, each to consist of one light and eight foot artillery companies were provided. The staff was essentially the same as that of the infantry regiments. Both light and foot companies were to consist of six officers and 55 enlisted men.

The officers of the Corps of Engineers were retained, but no enlisted men were provided. The Medical Department was reduced to a Surgeon General, eight Surgeons, and 45 Assistant Surgeons.

The Divisions of the North and South were abolished and replaced by Departments of the East and West. Two briga-

dier generals were provided to command the departments. Their staffs, aside from specially detailed officers, were to consist only of an aide-de-camp who doubled as their Adjutant.

Summary

The period during which John C. Calhoun was Secretary of War (1817-25) has been discussed mainly from an organizational standpoint. The foresight and sound military thinking of Calhoun can be seen easily by a consideration of his policies and proposals during his tenure of office. On the other hand, the unsatisfactory results of congressional attempts to cut the military budget without regard for the protests of the civilian Secretary of War also are apparent.

Because of congressional and public distrust of a strong military, the United States went through its first century with a poorly organized War Department General Staff. The defects of our staff system are evident in every war fought by the United States in the 19th century. Yet here, before the Nation was 50 years old, was a Secretary of War whose concepts were akin to those eventually adopted by the Congress in 1903. It is regrettable that he is remembered by most of his countrymen for his championship of the southern cause of States rights, and that his excellent service as Secretary of War is largely forgotten.

The Army will never be able to fulfill its essential role unless it always has clearly expressed missions and firm, timely assurance of the men, money, and materials necessary for their discharge. The Army needs the enlightened support of officials and citizens who understand the need for a steady military policy uninfluenced by short-term considerations.

General Maxwell D. Taylor

THE IMPACT OF PHILOSOPHY ON NATIONAL STRATEGY

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The art of war is a science in which nothing succeeds which has not been thought out and calculated.

—Napoleon

TO FOLLOW Napoleon's guidance, one of our principal tasks today is speculation on the future of the art of war. The narrow concepts of war as struggle between armed and uniformed bodies of men have "gone with the wind." Economic, political, psychological, and unconventional warfare are accepted in today's cold war jargon. These facets that are considered in shaping our national strategy are well known to all our policymakers and planners; the purpose of this article, however, is to show that more emphasis needs to be placed upon a realization that philosophical viewpoints now also have a terrific indirect effect upon the development of national strategy. Although these viewpoints are not always evaluated in the evolution of our strategy, there should be a conscious and serious consideration of them in any estimate of the situation at the national (or international) level.

The views of men are combined to form the opinions of groups; those of groups are amalgamated to form a community philosophy. Consideration of community phi-

losophies produces a national philosophy—and we have one.

While it is true that our philosophy is not as pronounced in point and propaganda as that of the Communist, we are now aware that there are conflicts in his—such as the denunciation of Stalin and the immediate reversal. However, in actuality, little real Communist philosophy appears in print. Karl Marx was their philosopher; but most of the works we read and hear about are those of Lenin, Stalin, *et al*, which are not really any more philosophical than *Mein Kampf*. These latter works are doctrinal, not philosophical. There is a difference; for, pragmatically considered, we can see that the ends of Communist philosophy, as announced by Marx, and the implementation by Stalin and his successors, are grossly different.

Decision Making

Philosophy affects our lives at every level. Our senior statesmen are confronted with the ethics of decision making which is, or should be, based on our national philosophy. Our schoolchildren are subjected to philosophy from their first day in the classroom. Where the statesman may recognize the source of his decision of "greatest good for the greatest number of Americans" as the philosophy of utilitarianism, the father who says "no" to

The philosophies that shape the thinking of our allies, ourselves, and our potential enemies should be made a part of the required education of all our responsible leaders in this age—both in and out of uniform

his teenage daughter to avoid setting a poor precedent may not realize that he appreciates Immanuel Kant's principle of the categorical imperative. Yet each decision was based upon philosophical viewpoints. These viewpoints are found in every aspect of our daily lives and affect the mental attitudes of our leaders, directly or indirectly, in making the decisions that promulgate our national strategy.

Not only are there philosophies in existence that affect our policy arts type professions such as government, business, the military, and teaching, but some philosophies have tremendous effect on what can be termed the national character. To read the national character then, we must isolate the various philosophies that influenced its development. "As a man thinketh, so is he" can be expanded easily to "as a people thinketh, so are they," for philosophy molds thought patterns of nations as well as of individuals.

To state categorically that "all Americans are pragmatists" or "all Russians are Communists" would be a gross oversimplification of the term "national philosophy." As Napoleon said, "From the sublime to the ridiculous is often just one step." But we can isolate the philosophical viewpoints that mold the character of a nation and we can study these to get an insight into an enemy's manner of thinking. This can be done in its simplest form

as illustrated by Rommel's photograph on Montgomery's wall. When asked why he constantly kept a photograph of Rommel on his wall during the African Campaign, Montgomery replied: "So I can look at it and say to myself, 'What would I do in this situation if I were Erwin Rommel?'" Had Montgomery gone one step further and evaluated the philosophies to which Rommel had been subjected in his youth, he may have ended the campaign much sooner. Rommel's papers state: "I can't understand why he never destroyed us when he first had the chance."

National Thinking

What are some of these philosophies that mold national thinking? First, in our own country we are subjected to the philosophy of Jean Jacques Rousseau from our first day in school, and even earlier than that, for we are exposed to our parents who were exposed to it as were our grandparents, and so on back. How many times does the vein of "life, liberty, and the pursuit of happiness," "all men are created free and equal," and "inalienable rights" appear in our sacred documents—the Constitution and Declaration of Independence? Their source? The Founding Fathers had read Rousseau.

But as many psychiatrists will verify: If an individual's actions were as strange as our actions as a nation, he'd spend a lot of time on the couch taking treatments. Why? Because of basic inconsistencies; for example, our Government is endowed basically with the thoughts of Rousseau and Voltaire but our economic life is more pragmatic than William James and Pierce ever conceived. Truth (and right) are functions of practicability in our business world, whereas idealism dominates over national heritage. Visualize the German, as an ally, trying to understand the things we do as a nation!

But the Germans can understand the Russians far better than they can understand us, for both peoples have been in-

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fluenced widely by the writings of Kant who changed the color of his philosophies from "green" to "brown" as required. At one moment Kant is for freedom of the will; at the next moment he is for captivity of the will. Here he is for idealism; there he refutes idealism; today he is atheistic; tomorrow he says, "If there were no God it would be necessary to invent one." Small wonder that the average American, trained in a philosophy of "black" and "white," is baffled by the actions of Communists whose policies resemble Kant's philosophy.

A good intelligence staff officer practices the principle of "empathy"; he projects his mind into that of the enemy commander. But how can a mind based on one philosophical tradition be projected into one of a divergent philosophical bent? Montgomery tried this with Rommel with a degree of success greater than most of us have been able to accomplish. The surprise achieved by Hitler's last desperate gamble—the Ardennes counteroffensive in December 1944—resulted from our inability to capture Hitler's philosophy when our G2's projected their minds into his. They failed to realize the measures Hitler would resort to driven by a philosophy of desperation.

Similar comparisons between the American "way" (philosophy) and that of our allies could be made profitably in an attempt to strengthen our alliances by understanding what underlies their actions.

Reflection on the divergent philosophies—or subphilosophies—that appear in different places in the "American way" seems advisable. The United States Army

has a pragmatic philosophy. Practical results not theory and falderal are the measurement of efficiency. "Get the job done," "mission type orders," and "the principle of the objective" all reflect our practical approach. We measure worth by whether the theory or idea has a practical value and can be implemented.

Absolutism

Yet there will be found, in and out of the Armed Forces, a few loud voices preaching the philosophy of absolutism. "No way is right but my (our) way." "The rest of you are just here for convenience. WE will win the war—you are obsolete." Lest we fall a prey to an absolutist philosophy, remember how the Prussians put all their eggs in the "oblique order" basket at Jena in 1806 and were conquered and occupied by Napoleon. Avoid "one and only" philosophies. The next war is not going to be won by the B-52 alone, armor alone, "A" weapons alone, or any other thing or group alone. If it comes (and we all hope it can be perpetually deterred), it will be won only by the joint and combined efforts of all services, branches, and allies fighting in three dimensions: land, sea, and air. Let that be our philosophy as members of the Armed Forces.

To show all aspects of the impact of philosophy on national strategy is beyond the scope of this article. It would be well, however, if the philosophies that shape the thinking of our allies, ourselves, and our potential enemies were made a part of the required education of all our responsible leaders in this age, be they in or out of uniform.

MOVING?

If you are moving, please notify the MILITARY REVIEW, Fort Leavenworth, Kansas, of your change of address. Be sure to include your name, *old* address, and *new* address.

Two Lieutenants and Two Rounds

Major Ismet Peker, Turkish Army

War is made up of thousands of individual and small unit actions—many heroic, many routine, and many inconsequential. All elements of the United Nations Command fought well in Korea. Their actions and the actions of their soldiers would fill a hundred volumes. When the following vignette came to hand the editors decided to print it, not only because it concerns members of one of the most gallant elements of the United Nations force, but because it is such a clear example of the code by which real fighting men live.—Editor.

THE Far East land of Korea was the scene of the war between communism and democracy and the defeat of communism at the end of the war by the overpowering strength of democracy. This piece of land once formed, and now keeps on forming, a brilliant example of how an aggression directed against the independence, freedom, and territorial integrity of a nation was punished, and will be punished by the United Nations.

The word "Korea" always reminds me of streams running red with the martyrs' blood, the dashing of pieces of the body into the sky, the growing of the warmth into a hellish temperature caused by the muzzle flash and blast of the weapons, as well as the victory gained by democracy.

Whenever I think of or read the word "Korea" anywhere, I can easily imagine a magnificent scene full of thousands of soldiers with their bayonets in their hands, ready to start a big assault over the martyrs and on to the enemy lines. Together with the deeds of innumerable heroes of the Turkish Brigade, it comes into my sight the manner in which a couple of Turkish lieutenants who had only two

rounds left escaped from the hands of four Communists.

Now, among the members of the Turkish Brigade in Korea, who had accomplished so many heroic deeds, I will tell you about the adventures of two lieutenants—Erdoğan Mete and Rifat Sümer.

It was in the Battle of Kunu-ri that a fire fight with the enemy had begun. The enemy was attempting to outflank the Turkish forces while trying to fix them by frontal fires.

Lieutenants Mete and Sümer, each of whom were commanding a platoon, seeing the intention of the enemy, decided to prevent him, saying, "If two of us move up to that hill on our left and deliver a flanking fire to the enemy in order to draw his attention over there, our platoons will be able to withdraw under the command of the platoon sergeants."

They called their sergeants and informed them about their decision; gave them orders saying, "As soon as we open fire from there at the enemy, you sergeant, will withdraw the platoon up to that hill, back there."

After giving this order, two lieutenants hurried to the hill on their left, and began to fire. A while later because the enemy directed his fires to that particular hill as the two lieutenants had guessed, the platoons were able to move to the location designated before.

These two young heroes were so busy with their fires, which were partly inflicting casualties on the enemy and partly neutralizing him, that they knew nothing about the enemy soldiers who had moved very near. Suddenly they heard voices within two yards, speaking in a strange language they did not understand. They turned around and saw approximately 20 Chinese soldiers with rifles pointed at them, saying, "hands up."

The two lieutenants were captured at a time they did not expect; consequently, their joyful moods were converted into sorrowful ones.

After making a search of their clothing from head to foot, the Communists sent the two lieutenants to the rear in the company with four Chinese soldiers. They started a dangerous trip toward an unknown place. However, they were not handcuffed or tied.

When they got to a depression on their way to the Communists' rear area, the following conversation took place between Lieutenants Mete and Sümer:

"Sümer, I've my pistol with me."

"Is that right, Mete?"

"Yes. As the holster had been torn out, I was carrying it just under my waistband. So they didn't touch it during the search. But unfortunately I've got only two rounds left."

"Mete, I'm certain that they're going to kill us. If it is predestinated, we must die by fighting, but not in a miserable manner—being prisoner of war. Look here, Mete, I've got a plan."

Major Ismet Peker was graduated from the Turkish Military Academy in 1937. Upon completion of the Foreign Languages Course at Ankara University in 1950, he was transferred to the Corps of Military Teachers as an English instructor. He attended an Automotive Course of the British Army, and the Advanced Course of The Armor School at Fort Knox, Kentucky. He is now a member of the faculty at the Military Academy in Ankara, Turkey.

If I am captured I will continue to resist by all means available. I will make every effort to escape and aid others to escape. I will accept neither parole nor special favors from the enemy.

(Article III, Code of Conduct for American Fighting Men)

"Good. What is it, Sümer?"

"We'll kill these four soldiers, and then will go away."

"That's excellent, but how?"

"You draw your pistol and kill the soldiers coming behind us while I engage in a fight with the other couple. You'll come to my assistance after finishing your part. This is the only way to escape, Mete."

"Do you think we can do it?"

"Sure. And we must do it. Otherwise they're going to kill us. I'll count three, and when I say 'three,' the fight for freedom will begin. Okay?"

"Okay, Sümer."

The Communist soldiers, who did not understand any word of this conversation, were walking heedlessly with their rifles on their shoulders.

As soon as Mete heard "three," he quickly drew his pistol and fired one round at each soldier following them. Now two of the Communists were dead. Lieutenant Mete hurried and jumped on the other couple with whom Lieutenant Sümer had been engaged in the fight of death and life.

Lieutenant Sümer with a stone and Mete with the grip of his pistol delivered several such hard blows on the head of each soldier, one after another, that the soldiers instantly fell dead.

Thus the two lieutenants carried out their plan successfully, and saved their lives. There was one more thing to do. It was to go away. They did so, and joined their unit which was executing withdrawal to a prescribed location.

MILITARY NOTES

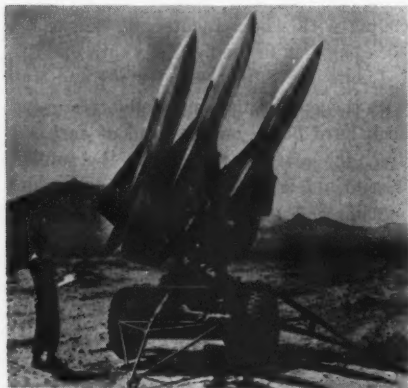
AROUND THE WORLD

UNITED STATES

Low-Altitude Defense Missile

The *Hawk* air defense system, designed to reinforce the low-altitude capability of anti-aircraft defenses, is planned for installation in the New York City and Washington-Baltimore areas. The *Hawk*, a 16-foot-long solid propellant rocket that is said to be capable of seeking and destroying attacking aircraft flying at the lowest

defense system, and with field armies. In fixed installations underground storage of the missiles is planned. With mobile combat forces three of the *Hawk* missiles can be mounted on a single launcher capable



Hawk mobile launcher

possible altitudes, will complement the defense against high-level air attack provided by the operational *Nike* system. The versatile *Hawk* can operate from fixed installations in the continental air



Hawk in flight

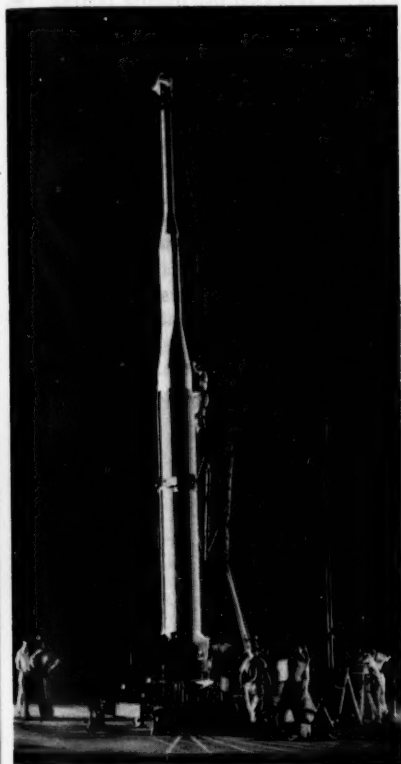
of transportation over highways, or by helicopter, or airplane. The unique radars of the *Hawk* system are designed specifically to detect low-flying aircraft in the blind zone of conventional radar. —Official release.

Multistage Rockets

The firing of multistage rockets with two, three, four, and five stages has taken place in United States rocket research programs. The two-stage rocket used an *Honest John* and a *Nike* motor, and reached a speed of almost 3,500 miles an hour and an estimated altitude of more

than 30 miles. It carried 51 instruments for measuring atmospheric friction in a twin-pronged head.

The three-stage X-17, a 40-foot-long rocket that weighs slightly less than six



The X-17, world's fastest rocket

tons and carried a 75-pound payload of instruments and radios, is the most powerful missile in existence using solid propellants. Although its top speed has not been announced, it has been said to have reached the highest speed ever attained by an instrumented missile.

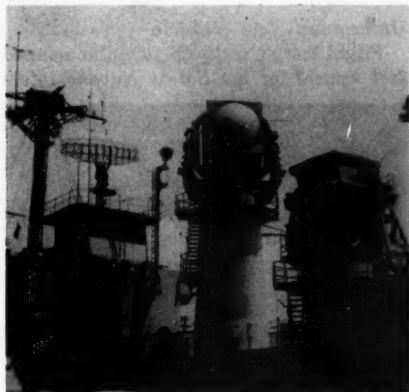
A four-stage rocket has been fired which achieved an altitude of 200 miles and a speed of Mach 10.4.

A five-stage rocket is reported to have reached 8,000 miles an hour. The five stages of this rocket consist of an *Honest John* motor, two *Nike* motors, a fourth stage known as *Recruit*, and a small fifth stage unit.

Hypersonic rockets have been used in research into the problems involved in the high-speed reentry of long-range ballistic missiles into the earth's atmosphere. It has been disclosed that the nose of high-speed missiles is blunt and rounded, rather than thin and pointed. This is said to permit the dissipation of much of the heat caused by friction with the air.—News item.

Superradars

The two AN/SPQ5 radars that control the *Terrier* antiaircraft missiles of the cruiser *Canberra* are capable of furnishing stable guidance to the supersonic rockets whether fired singly or in salvos at individual or multiple enemy attackers. The radars have massive turret like antennas and resemble giant searchlights.



Radars of the *Canberra*

In addition to providing an extremely flexible means of accurate missile control, the radars also incorporate a long-range early warning system.—Official release.

Streamlined 'Inflatoplane'

A streamlined version of the Navy's *Inflatoplane* features an enclosed cockpit, a one-piece wing, and simplified controls. The *Inflatoplane*'s new wing, tail assembly,

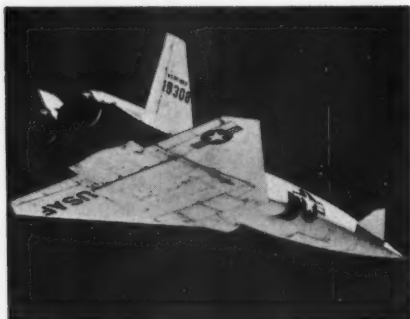


New model of *Inflatoplane*

and cockpit are formed of a double wall of rubberized fabric connected by nylon threads. It can be inflated by an ordinary household vacuum cleaner, and is powered by a 44-horsepower engine.—News item.

Unmanned Test Vehicle

Flight testing of the *X-10*, an unmanned test vehicle for the *SM-64 Navaho* inter-



Remote-controlled *X-10*

continental guided missile program, was successfully completed prior to the recently announced abandonment of the

Navaho project. The *X-10*, powered by two *J-40-1* turbojet engines, made many flights at supersonic speeds under full automatic control. The *X-10* was provided with a landing gear to make it recoverable for repeated use during testing. This was the second test vehicle to be flown as part of the *Navaho* weapons system research program. The first vehicle was the *Nativ*, a 14-foot missile that was tested in 1948. The *Navaho*, which had been under development since 1946, was a rocket-launched, ramjet-propelled missile designed for a speed of Mach 3, and a range of 5,000 miles.—News item.

Lightweight Radios

The Marine Corps has adopted a lightweight radio communications set, and the Army is redesigning its helmet radio to permit the use of solar batteries. The



Solar-powered helmet radio

Marine Corps' radio can operate at ranges up to 10 miles. Several sets can be linked together as relay stations to transmit messages as much as 40 miles. They can be tied in to a switchboard for multiple dis-

tribution or communicate directly with other radios on the same channel. The new set is said to be ideal for use in helicopter assault operations. It permits as many as eight voice messages to be transmitted simultaneously, and utilizes superhigh frequencies. The complete radio and all auxiliary parts can be carried by five men. It is waterproof, buoyant, and can be floated ashore during amphibious landings.

In the Army's helmet radio, long narrow clusters of tiny silicon wafer cells have been inserted into the crown of the helmet. These solar cells, activated by sunlight, power the radio for daytime operation and also charge four small nickel-cadmium batteries to operate the set at night. The helmet and radio combined weigh only two pounds and 11 ounces.—Official release.

Remote-Controlled Tractor

A robot dozer-tractor that can be operated anywhere within range of the radio by which it is controlled is under test by Army engineers. It is expected to be of special value in construction work in radioactive areas and combat zones. It also



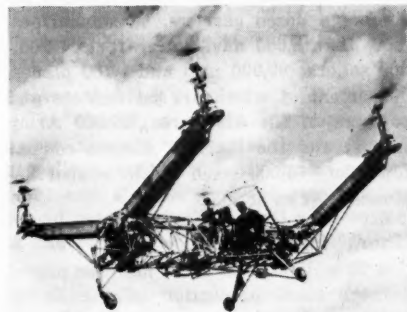
Radio-controlled tractor under test

may be used for various other tasks such as fighting large fuel storage fires. Normal operations can be performed from distances of up to 15 miles, the practical range of the radio. Early tests have been conducted with the tractor and control

point within viewing range, but Army engineers plan for the installation of small television cameras on the tractor which will give the operator knowledge and observation of the machine, and permit him to control it without the need for direct visual observation. Using a standard military radio and a special control box, the operator can start, stop, and steer the tractor, engage and disengage the gears, and manipulate the dozer blade up and down.—Official release.

Four-Rotor Helicopter

In the four-rotor helicopter, commonly called a *Quadrotor*, four small rotors replace the one or two large ones usually used for vertical lift. A prototype *Quad-*



Quadrotor Model A

rotor Model A has been tested successfully in free flight. It uses two 90-horsepower engines for both a power source and as a safety feature since either engine can provide sufficient power to keep the aircraft aloft. In the *Quadrotor*, the conventional cyclic pitch control system has been eliminated which simplifies construction and maintenance. Plans for further developments include the *Model E* which will be able to carry a payload of 10,900 pounds, and will have a maximum speed of 170 miles an hour and a range of 300 miles.—News item.

Consolidated Command

A command reorganization has centered control of all US military operations in Asia and the Pacific Ocean under Admiral Felix B. Stump. Army, Navy, and Air Force operations in Guam, the Philippines, Japan, Korea, Taiwan, Okinawa, and Iwo Jima are consolidated by the move. The United States military assistance programs in Laos, Cambodia, the Philippines, Taiwan, and Vietnam also are controlled through the new headquarters. The staff of the headquarters is composed equally of Army, Air Force, Navy, and Marine officers. According to public press reports, the following United States military forces will be brought under the new central command: 400 naval vessels, including a dozen carriers, 50 submarines, more than 6,000 naval aircraft, and 200,000 sailors; 90,000 men and 1,100 planes, 90 percent of which are jet fighters and bombers, of the Air Force; 90,000 Army troops; and the Marines' largest combat force of 65,000 men with supporting planes.—News item.

'Snark' Into Production

A 73 million-dollar order has been placed for the mass production of the *Snark* SM-62 intercontinental missile. The *Snark*, which is propelled by a 10,000-pound thrust turbojet engine and two solid propellant boosters, is a cigar-shape pilotless bomber 74 feet long, with sharply swept-back wings spreading 42 feet. The eight-ton missile is reported to have a maximum speed slightly under the speed of sound, a range of 5,000 miles, and can reach an altitude of 60,000 feet. The *Snark* is equipped with a guidance system capable of directing it to its target through all weather conditions. The first United States intercontinental missile squadron to be equipped with the *Snark* is being formed. It will be assigned to the Strategic Air Command and is expected to be operational in 1958.—News item.

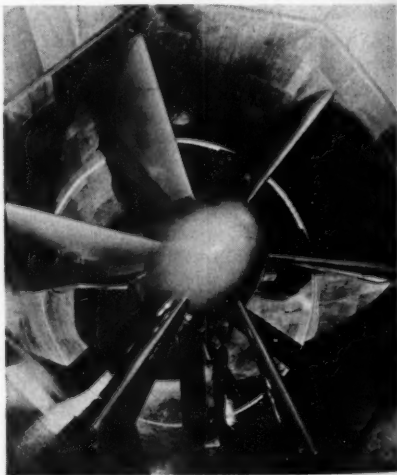
GREAT BRITAIN

Glass Cage for Atoms

A giant glass bottle will be used in an effort to channel the power of the hydrogen bomb into the commercial generation of electricity. The apparatus will consist of a glass bottle containing the fusion material and surrounded by electromagnets. The magnets will create electrical fields which will keep the intensely hot gases from touching the sides of the bottle. In experiments using this method, temperatures of more than two million degrees Fahrenheit have been developed without melting the glass container.—News item.

Low-Speed Wind Tunnel

A low-speed wind tunnel, claimed to be the largest such device of wooden construction in the world, will be used in



Giant fan of all-wooden wind tunnel

design and developmental work on guided missiles and other projects. A fan 22 feet in diameter will drive air through the tunnel at speeds of about 300 feet per second.—Official release.

Missile Transporters Ordered

A number of mammoth vehicles for the handling of *Corporal* guided missiles has been ordered by the British Government. The vehicle, which can carry the *Corporal* over highways or rough battlefield terrain and position it for launching, is driven by a separate electric motor for each wheel. Other electric motors are used for



Corporal transporter

power steering and for driving the missile handling mechanisms. Electric power for the motors is supplied by engine-driven generators.—Commercial source.

Naval Vessels Launched

Recent launchings of vessels for the Royal Navy include the submarine *Grampus* and the frigate *Duncan*. The *Grampus* is the third of the postwar *Porpoise* class. Other operational underseas craft of this class are the *Porpoise* and the *Rorqual*. The *Duncan* is the twelfth of the *Blackwood* class of prefabricated antisubmarine frigates.—News item.

Gas Turbine Helicopter

Designed primarily for naval use in antisubmarine operations, the gas turbine-powered helicopter *Wessex* will also be used for air search and rescue and casu-

alty evacuation. It can carry 12 passengers or eight stretcher cases. Production models are expected to be ready to go into

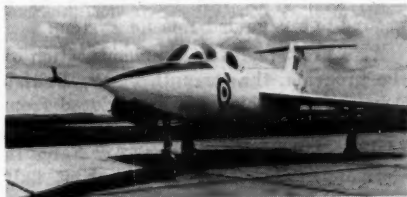


Gas turbine-powered *Wessex*

service by early 1959. The *Gazelle* free turbine engine of the *Wessex*, which develops 1,430 horsepower, was designed specifically for helicopter use. The aircraft has a maximum speed of 132 miles an hour and a range of 440 miles.—Official release.

Rocket Aircraft

The *S-R.53*, a rocket interceptor research aircraft, utilizes a *Spectre* liquid propellant engine for its main powerplant and a *Viper* turbojet engine as a second power unit. The rapid acceleration of the rocket engine, combined with the



Jet- and rocket-powered *S-R.53*

comparatively greater fuel economy of the jet, is said to make for greater flight endurance and flexibility in meeting the requirements of high-altitude interception. The *S-R.53* is reported to have extreme maneuverability at high altitudes. The *Spectre* rocket engine uses concentrated hydrogen as an oxident, and is free from any requirement for oxygen from the atmosphere.—Commercial source.

New Defense Program

Great Britain's new defense plan is announced as the biggest change in military policy ever made in normal times. It will take place over a period of five years, with the armed forces planned for reduction by about 45 percent. The cost of defense is not expected to decline in proportion to the drop in strength because of the ever-increasing cost of modern weapons, the higher cost per man of Regular forces, and the fact that more civilians will be employed. The program does not contemplate a change in Great Britain's part in the collective defense plans. According to the white paper:

Britain's defense policy is determined by her obligations to make her contribution to NATO and other alliances for collective defense, as well as to discharge her own special responsibilities in many parts of the world.

A manned air fighter force, adequate for defense although smaller than the present force, will be maintained. It will be progressively equipped with air-to-air guided missiles. It is expected that fighter aircraft eventually will be replaced by a ground-to-air guided missile system.

As a first step in the implementation of the program, the strength of the British Army of the Rhine will be reduced from 77,000 to about 64,000, and the aircraft of Britain's Second Tactical Air Force in Germany will be reduced to about half their present number by the end of March 1958. A similar reduction will be made in the light bomber force in England, which is assigned to NATO.

The Royal Navy will emphasize the role of the aircraft carrier. A small number of carrier groups will be organized, each composed of one aircraft carrier and a number of support ships. Apart from carriers, the number of large ships will be reduced to a minimum, and some newer types of small vessels will be equipped

with guided missiles. A considerable number of ships now in reserve, including battleships, will be disposed of or scrapped.

The present strength of the forces is 690,000, which includes 450,000 Regulars. This total is expected to fall to about 625,000 by March 1958; the strength of the armed forces will be stabilized at about 375,000, all Regulars, by the end of 1962. It is expected that compulsory National Service will be terminated after 1960.

Defense expenditures for the present year will amount to 4,152 million dollars, less 140 million to be received from West Germany, and 36 million from the United States.

The program also is expected to benefit Great Britain's economy considerably. During the past five years, defense has absorbed 10 percent of her national product, and seven percent of the working population are either in the services or supporting them. One-eighth of the output of Britain's metal-using industry has been devoted to defense.—Official release.

WEST GERMANY

Forces for NATO

The first three of a programed 12 West German infantry divisions, each with about 80 percent of their peacetime strength of 12,000 men, have joined NATO forces. Two of the divisions will come under operational control of the United States Seventh Army, and the other one will be under operational command of NATO's Northern Army Group. However, for purposes of administration and training they will remain under direct control of the West German Army. Two armored divisions are in training and will come under the Atlantic alliance control by the end of this year. A brigade-size mountain division and a streamlined airborne division are being formed and will be turned over to NATO during 1958. It has also been announced that units of the German Fleet will participate in

NATO sea maneuvers this year. There are presently 10,000 officers and men in the German Navy. It is expected to reach a full strength of 25,000 by 1960.—News item.

Flying Conference Room

The first of two British *Heron* aircraft ordered by the West German Government for use in service communications has been delivered. It is being converted into a "flying conference room" by the installation of filing cabinets in the space reserved for food and drink in the civil version of the plane. The standard *Heron*



Heron with German markings

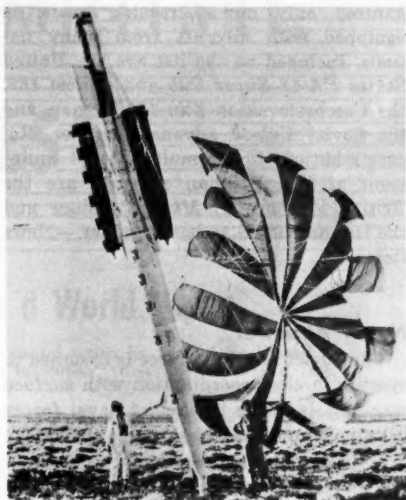
airliner carries 14 to 17 passengers, and the executive model has luxurious appointments for eight passengers. The *Heron* is now in use by civil airlines and national air forces of 20 different countries.—Official release.

AUSTRALIA

Recoverable Missile

One of the missiles currently undergoing tests at the Woomera Rocket Range is the British *Bobbin* missile and ramjet test vehicle. This rocket has been used in the development of the *Thor* ramjet en-

gine (MR, Dec 1956, p 69). The *Bobbin* is equipped with a long spiked nose, and parachutes which operate at supersonic



The *Bobbin*

speeds to slow down the vehicle and lower it to the ground. It lands on the nose, remains upright, and can be recovered for examination and reuse.—News item.

SWEDEN

Fast-Diving Submarines

Construction of three of six planned *Hajen* class submarines, the *Valen*, the *Hajen*, and the *Sälen*, has been completed.



HSuM *Hajen*

These 800-ton displacement undersea craft are equipped with snorkel, and are especially designed for fast-diving capabilities.—News item.

AUSTRIA

Air Force Progress

The Austrian Air Force, presently organized only on a training basis, is equipped with aircraft from many nations. Included on the list are the United States *PA-18 Super Cub* and *Cessna 182*, the Czechoslovakian *Zlin 126 Trener*, and the Soviet *Yak-11* advanced trainer. Recent additions to the multinational equipment of the Austrian air arm are the British *Vampire T. Mk. 55* trainer and the Italian *Fiat G.46* basic trainer.—News item.

USSR

Naval Airpower

The Soviet naval air force is designed to operate in close coordination with surface war vessels. Since the Soviet naval forces have no aircraft carriers, such operations are limited by the range of land-based planes. The navy's air arm comprises 3,500 aircraft—about half are jet fighters, one-fourth jet light bombers, and the remainder transports and reconnaissance aircraft. The strength of the naval air arm is about 90,000 officers and men. It is reported to be equipped with the most modern torpedo-carrying planes and the latest types of mines and torpedoes. Naval light bombers in general use are the *TU-14 Bosun* and the *IL-28 Beagle*. The *Bosun*, with an operational range of approximately 1,400 nautical miles, is powered by two *VK-1* centrifugal flow turbojet engines of about 6,000 pounds thrust each. The standard naval fighter aircraft is the *MiG-15 Fagot*.—News item.

JAPAN

Airbase Transfer

Five United States airbases and 24 radar stations in Japan are scheduled to be transferred to Japanese control by 1960. The Miho and Tsuiki airbases in central Japan are planned for release during 1957.—News item.

BURMA

Aircraft Ordered

Six Beechcraft *D.18S* aircraft have been ordered for the Burmese Air Force. The *D.18S* is a twin-engine trainer-transport which can carry a 3,000-pound load at a speed of 230 miles an hour. Two of the aircraft are planned for use as navigational trainers and the other four will be converted for aerial photography.—News item.

FRANCE

Ramp Launching

Plans are being made to launch the delta-wing Dassault *Mirage III* single-seat fighter from a ramp similar to that used for launching the *Matador* missile. The takeoff is to be assisted by two Jato rockets. The *Mirage III* is equipped with dual-power—two *M.D. 30 Viper* turbojet engines of 2,200 pounds thrust each with afterburners, and a *Sepr* rocket motor which burns a self-igniting mixture of furaline and nitric acid.—News item.

Test Bed for 'Atar'

A 75-ton *S.E.2010 Armagnac* airliner, normally propelled by four conventional engines developing a total of 14,000 horsepower, will be used as a flying test bed for two new jet engines—the *Atar 8* with a thrust of 9,600 pounds, and the *Atar 9* with 13,000 pounds thrust.—Official release.

BERMUDA

British Troops Leave

It has been announced that the last British troop unit to be stationed in Bermuda, a light infantry company, has been withdrawn and will not be replaced. A British garrison has been stationed in Bermuda continuously since 1701, except for a short period in 1953. The final withdrawal of the garrison was necessitated by a reduction in British Army strength, according to the announcement.—News item.

FOREIGN MILITARY DIGESTS

The Atlantic in a World War

Digested by the **MILITARY REVIEW** from a copyrighted article by Admiral Sir Michael M. Denny in the "Journal of the Royal United Service Institution" (Great Britain) August 1956.

THREE hundred years ago more than one-half of the adult population of the United Kingdom was employed on the sea, or at the ports on maritime affairs. Today the proportion is much less; but the quantities of goods carried across the ocean to these islands have expanded at a rate far exceeding that of the growth of population in the intervening centuries.

A representative figure for imports into the United Kingdom in the five years before World War II is 56 million tons. Of this figure only eight million tons were crude oil and refined products which can be compared with the 25 million tons of oil imported into the United Kingdom in 1955, and which is expected to double by 1965.

We produce only half our food and feeding stuffs for livestock. We possess in these islands only three important raw materials for our industries: coal, iron ore, and china clay. As examples, we have to ferry across the seas all our tea, coffee, cocoa, cotton, copper, aluminum, crude oil, and tobacco; at least three-quarters of our wheat, sugar, butter, sulphur, raw wool, and soft woods; and about one-half of our meat and iron ore.

These import figures are stupendous and in no way are moderated by the development of air transport; in fact, imports are multiplied by the ever-increasing requirement in peace and war for aviation fuel, all of which, whether in crude form or refined, has to be imported overseas into the countries of western Europe. For example, if a transport or loaded cargo plane crosses the Atlantic eastward, there must be in Europe one ton of aviation fuel for every ton of air-delivered cargo to enable the aircraft to return.

In 1954 United Kingdom imports and exports by air from all areas were approximately 30,000 tons out of a total of 90 million tons of dry cargo. Thus, one ton in every 3,000 of dry cargo was transported by air.

A rough comparison between a modern cargo vessel and a *Bristol Britannia* will illustrate the relative carrying capacity of ships and aircraft. It is estimated that it would take 20 *Britannias* one year to carry the same quantity of bulk cargo across the Atlantic as one modern cargo vessel of 10,000 tons dead weight. This estimate is based on the assumption that the aircraft would each fly 3,000 hours a year

and that the ship, under war conditions, would make about four and one-half to five round trips annually. Because a new vessel of this kind would cost under two million dollars, and the cost of the 20 *Britannias* would be approximately 42 million dollars, it is clear, therefore, even without taking into account the substantially greater manpower necessary for their operation and maintenance, that the use of aircraft for quantity shipment of bulk cargo would be impracticable, even if the number of aircraft required could be setup.

If we look at the Atlantic in the event of a NATO war, most of the world's traffic is eastbound. This traffic should properly be regarded as the free world's "lifeline." The safeguarding of this lifeline, and the provision of an adequate flow of merchant ships is a prime factor in the NATO setup.

In the spring of 1943 a responsible official stated that: "The shortage of shipping is a stranglehold on all offensive operations." And it was to prove to have an equal stranglehold on essential civilian services in all countries except the Americas.

In peacetime the huge volume of shipping that traverses the Atlantic is owned, controlled, and operated by what can be described best as private enterprise. We have learned the hard way that in war this is not permissible. Therefore, both national and NATO authorities shall take over responsibility for the operation of seaborne traffic and the utilization of shipping in war.

The Division of Commands

NATO is a defensive alliance created in order to deter and, if that is not possible, to resist aggression in Europe or North America. It is important to remember that NATO is, in fact, a political alliance and will only work if it stems from the people through their politicians, and when all member nations are unanimous.

Therefore, we must strive continually to make the people believe in and support NATO, and, if necessary, sacrifice something of their national outlook, actions, and aspirations in order to make it efficient.

The vast area of the world over which NATO nations are spread, and the sea areas which extend between them, accent the fact that the power center of this alliance is the United States. This defensive alliance is operated in war by the Standing Group of the Military Committee which is comparable to the Combined Chiefs of Staff in the last war.

The control of the varied forces that will be operating in war over this large NATO area is clearly too much for a single command, and it seemed logical to the architects of NATO to divide the area into two operational commands—the area in which the fighting in Europe is likely to take place, and the sea area behind it across which this battle in Europe has to be supported and sustained.

Atlantic Command

There was considerable opposition to the formation of an Atlantic Command, and it was not until Supreme Allied Command Europe (SACEUR) had been in operation for about 18 months that Supreme Allied Command Atlantic (SACLANT) was finally established in January and inaugurated in April 1952. So we have Allied Command Europe and Allied Command Atlantic, one mainly land/air and the other predominantly maritime.

The views of certain countries and other considerations led to the inclusion of the Channel Command as well as the other two. It should be noted that the battle for the command of the air, on which all else may well depend, will know no boundaries.

The Atlantic Command extends from the North Pole to the Tropic of Cancer, and from the coastal waters of North America to those of Europe and Africa—except for the English Channel and the waters around

the British Isles. It is at present divided into two major geographical command areas.

The western Atlantic area is commanded by an American naval commander in chief, at present the SACLANT. The eastern Atlantic area is under the joint command of a British naval commander in chief, and a British air commander in chief. Both areas are further divided into sub-areas. The important Atlantic islands, such as Iceland, Greenland, the Azores, Bermuda, and the Faeroes, are placed for military defense purposes under island commanders, all but one of whom is a national of the sovereign island power.

A third area, the Iberian Atlantic Command, covering the southeasterly portion of the Atlantic Command, has been defined but not yet established. Pending a decision, responsibility for this area in the event of an emergency has been assigned by SACLANT to the commander in chief, eastern Atlantic.

Directly subordinate to SACLANT, and an operational rather than a geographical commander, is the commander Striking Fleet Atlantic. This fleet is a force of heavy surface ships, aircraft carriers, and necessary supporting units. Its role in time of war would be to undertake offensive and support operations rather than the direct defense of the Atlantic trade routes. It is contemplated that the Striking Fleet would furnish support to SACLANT as well as other NATO supreme commanders.

Another important operational command is that of the commander Submarine Force eastern Atlantic, who is responsible, under the commander in chief, eastern Atlantic, for coordinating the operations of all submarines assigned to those waters. Submarines from six nations have undergone training.

SACLANT, like his colleague SACEUR, is responsible directly to the Standing Group. His peacetime duties are to develop defense plans, organize and conduct

combined training exercises, make recommendations to the Standing Group and to national authorities on military questions that will affect his ability to discharge his wartime and peacetime responsibilities, and establish an efficient organization suitable as a nucleus for wartime expansion.

Eastern Atlantic Area

In the Eastern Atlantic Area (EAST-LANT) headquarters, which is predominantly a British-controlled formation, we employ the system known to us as Joint Command for the conduct of maritime operations, as opposed to that employed, for example, in the United States, where a unified command is normal. In our system the responsibility for maritime operations in areas of British responsibility is shared by the Royal Navy and the Royal Air Force, governed by formal agreement between the two service ministries.

This agreement is on the basis of the "predominant partner" which means that, although the problem and responsibility is a joint one, the war at sea is primarily the concern of the Royal Navy, whereas only one portion of the Royal Air Force is specifically equipped, trained, and normally employed on maritime operations. The naval commander is the predominant partner and as such would be responsible for coordinating the operations of naval forces and shore-based aircraft.

The efficiency of such an organization has been well-illustrated. The close partnership is reflected in the joint organization and system of control which is followed both in the national and NATO organizations which make up our several responsibilities in the eastern Atlantic.

All the NATO nations except one border on the sea; two on the North Atlantic, and four on the Mediterranean. We are dependent separately and collectively on sea lines of communication for our mutual economic support and military survival. If any nation were denied access to the seas it would be a disaster to that nation

and a major setback to NATO. If our losses in the Atlantic were unacceptable, NATO could not survive long. It is significant that we are formed into the North Atlantic Treaty Organization.

Our dependence on the seas and on seaborne transportation is not reduced by the steadily increasing importance of airpower. On the contrary, the heavy demands of air forces for operational maintenance and for fuel have placed greatly increased demands on seaborne transport. Likewise, the tonnage requirements of modern armies are far greater than ever before. Furthermore, the civil requirements of nations for shipping will be increased immeasurably by reason of atomic damage to their cities, seaports, and national resources.

Thus while we in NATO should regard the Atlantic as the lifeline, a potential enemy would regard it as a suitable theater for applying the stranglehold. In this connection let us note that the second largest fighting navy in the world—and the largest if measured by the size of the naval force kept in commission in peacetime—is not in NATO, nor is it a maritime power when tested by the yardstick of overseas trade and overseas possessions.

The world knows, as well as we, of NATO's dependence on the sealanes for supply and reinforcement of its European partners. It knows how potentially vulnerable these sealanes are to underwater, surface, and air attack. Thus all should consider the possibility of the Atlantic becoming a barrier separating Europe from North America rather than the lifeline through which shall flow support and reinforcement to Europe and between the nations of Europe.

Tasks

SACLANT's tasks are to control the seas within the Atlantic Command region, to deny them to the enemy, to assure that the Atlantic remains, in war, as it is in peace—a main highway for the supply

and reinforcement of our nations and our military commands—and to assure that NATO has channels for the projection overseas of the national military power and resources necessary for their mutual support.

In addition to security of the seas, support and assistance must be rendered to adjacent NATO and national commands. In turn, SACLANT is dependent upon these commands to provide air defense of ports and clearance of mines in their national waters, and to secure the Baltic and Mediterranean exits to the high seas.

Thus SACLANT's primary task is to provide NATO with security in the Atlantic Ocean by guarding its sealanes and denying its use to the enemy. In other words, his mission would be to protect the Atlantic lifelines of the free world. This responsibility requires sufficient escort vessels and aircraft to protect an intricate convoy system, adequate hunter-killer forces to combat the underseas menace, a highly mobile striking fleet, and an effective submarine force.

Forces Available

In peacetime forces are placed periodically at SACLANT's disposal for combined training, but he has no forces assigned to him permanently. The reason for this arrangement can easily be explained. The Atlantic maritime powers of NATO naturally maintain naval forces and maritime air forces to protect their national interests in those waters in time of peace. To have created a separate NATO naval force for the specific purpose of guarding Atlantic Ocean lifelines in time of war would have been impossibly expensive.

Therefore, it was decided by the countries with interests in the Atlantic that the naval forces which they maintain in peacetime for their own national purposes should be dedicated to the common cause of protecting the lifelines across the Atlantic Ocean in time of war. Seven coun-

tries have earmarked forces for SAC-LANT. Naturally enough these forces are predominantly naval, but some ground forces and land-based air forces are included.

Other Forces

There are certain military forces not assigned or earmarked to any of the Supreme Commands, but which are nevertheless of great value to NATO. Although these forces are retained directly under national command their potential contributions to the defense of the West are massive and might be decisive. For example, the United States Strategic Air Command, based largely in North Africa, the British Isles, and the United States, is of particular importance as a deterrent force. Similarly the United Kingdom Bomber Command is equipped and trained for strategic air operations. The United Kingdom also has a large interceptor force for the defense of the British Isles. Finally each NATO country is responsible for the defense of its own coastal waters, and retains some naval forces equipped for in-shore minesweeping, harbor defense, and similar tasks.

It is well to remember that there is in existence a non-NATO submarine fleet whose current strength in oceangoing U-boats greatly exceeds the maximum U-boat strength deployed against the Allies at any stage of the two World Wars.

Merchant Shipping

The control of merchant shipping really means keeping the shipping situation in hand by marrying to best advantage the shipping available and the large number of demands on it.

Historically it is correct to state that, until 1945, the shipping situation never permitted either the military or the essential civilian requirements as postulated to be met in full and timely fashion. This was not due to the war losses of merchant tonnage due to enemy action. It was as much due to the combination of other

factors such as congestion at ports, time wasted in ports due to slow cargo-handling, enemy action reducing port capability, lost capacity inherent in the convoy system due to the increased over-all time required for the round voyage there and back, and theater commanders locking up shipping as warehouses or keeping them locally in expectation that they might need them in the future.

On this latter point it is of interest that the misuse of merchant shipping caused the President of the United States to issue a directive on 9 December 1944 ordering theater commanders to mend their ways in certain specified directions. The result of the President's directive produced a spectacular sudden flush of tonnage, considerably exceeding expectations. It now seems probable that at the end of 1944 shipping capacity was being wasted at the annual rate of nine million dead weight tons through this particular form of misuse.

Whatever may have happened in the last war, the shipping situation in the next will be far more troublesome.

Control of Shipping

The control of shipping takes two forms:

1. *Control of its employment* is the responsibility of various civilian agencies and includes the establishment of shipping pools and the allocation from these pools of shipping required for specific tasks.

2. *Control of its movement*, which is clearly bound up with the enemy threat to shipping and the conduct of naval operations, must be vested in the naval authorities on whom rest the responsibility for protecting shipping at sea.

The task facing NATO naval commanders at the outbreak of the war is unprecedented. Quite apart from the comparative paucity of the forces which will be at their disposal, and the greatly increased scale and nature of the enemy threat to shipping resulting from the development of modern weapons and technique, the ship-

ping itself largely will be disorganized and not even under effective national, let alone NATO, control.

The safe and timely arrival of each ship or convoy at its destination as prescribed by the above national authorities remains the primary aim of the appropriate Allied naval commander in the exercise of his responsibility for protecting shipping. In pursuit of this aim he will take all steps which are operationally necessary, including the diversion of shipping away from particular ports or localities, and holding it temporarily in refuge or assembly anchorages for its better protection or organization should the need arise.

However, in all cases it is his duty to endeavor by every possible means to get each ship to its prescribed destination, as and when it is required there. This will call for very close cooperation between the Allied naval authorities and the national authorities concerned.

The North Atlantic Council turned its attention to these matters soon after it was established. In May 1950 a Board was created and given the task of working out plans to ensure the most efficient use of available shipping resources in an emergency.

Shipping Resources

The most important principle on which the Board has agreed is that, in order to diminish the effects of a shortage of sea transport at the outbreak of war, the great bulk of oceangoing merchant ships under the flags of NATO countries would be pooled and, for allocation purposes, put at the disposal of an interallied body to be called the Defense Shipping Authority. This authority will be responsible for the allocation of oceangoing shipping throughout the entire area controlled by, and friendly toward, the member governments of NATO, its allies, and partners.

A rapid turnaround of ships can be achieved only if vessels can be loaded and unloaded speedily in ports which are free

from congestion. To this end, in each country in western Europe an organization has been set up to decide the destination ports for ships before the sailing of convoys, and the diversion of ships in convoy to other ports, if the original destination became unable to receive them. It is also important in wartime to have day-to-day information on the arrival of ships, so that internal transport by rail, road, or inland waterways can be used expeditiously and economically.

Conclusion

From an examination of the shape of a future total war, two major tasks immediately emerge. These are to gain command of the air and, while that battle is going on, to prevent the enemy land forces from occupying the territories of the NATO nations.

A third major task of equal importance is to ensure control of the oceans and seas so that convoys can cross the Atlantic, traverse the Mediterranean, and deliver to the NATO land and air forces in Europe all they need to conduct the struggle, and give us increased flexibility in the conduct of operations.

Nothing so far invented, including stockpiling, can do away with the vital need to deploy the power of the American Continent in Europe, and that could not be done if we lost command of the seas, and in particular of the Atlantic.

During the last two wars the minds of all combatants and civilians in their war efforts at home have been open and receptive to the visible, strenuous, bloody fighting of armies on land and on the beaches, and to the deadly impact of air fighting and air attack on their own family life and occupation. The war efforts of the merchant navies, the fighting navies, and the maritime air forces have been taken for granted. Although in each war we have been on the brink of disaster and of total defeat in our maritime affairs so as to lose the war, this has not happened. On

the other hand the great British public has been painfully aware that our armies have been driven out of continental countries; that our allied continental powers have been defeated and their countries occupied; and that our homes have had to

accept direct attack from enemy air forces.

These historical facts have bred a frame of mind that the navies are all right, and that maritime forces, sea and air, are there and will do their stuff because they always have. This is dangerous thinking.

Army Officer--Mercenary or Missionary

Digested by the MILITARY REVIEW from an article by Lieutenant Colonel A. Green in the "Australian Army Journal" September 1956.

LIVING in an age of ideologies rather than faiths, when self-salesmanship is exalted to the vast detriment of true human worth, the modern army officer finds himself frequently adrift in the economic tides and the technological currents of the times, without star or compass by which to steer. It is then that he seeks the satisfying simplicity of the happy warrior; the axioms of honest duty and limited, yet adequate, reward which inspired and sufficed his forebears. Yet there is no flight to a peaceful cloister—in an army school or a remote garrison—which can guarantee to insulate him from the remorseless onset of contemporary politics, economics, and technology. He must seek a valid, tenable faith to sustain him among the plethora of words, ideas, disintegrating philosophies, and integrating sciences which assail him.

A Lost Era

The reader who can sustain the sickly ego of the Boswell Papers must be amazed at Boswell's fanatical desire to enter the Guards, an aim which he was never to achieve. It is true that snobbery and a parvenu yearning for social acclaim were more responsible for his zeal than any purely military ideal. Nevertheless, we can be sure that there must have been hundreds more like Boswell. The life, the livelihood, and the prestige of an officer were much sought after, in contrast with the other ranks whom Boswell's idol Johnson

thought inferior to the very criminals in the gaols.

Moving from the fringe of the profession to its core we find that the luster of our boyhood heroes, such as Chinese Gordon, Kitchener, Robert E. Lee, or Marshal Ney, was derived as much from the general glow of the army as from the qualities of the individual. Contemporary scholars, doctors, and lawyers were equally noble, equally valuable, but their professions lacked that distinguishing quality and color which added to the fame of the soldiers. Arthur Wellesley's brother Mornington was the governor general of India at a period of great expansion, yet his reputation now is almost forgotten compared with that of Wellington the soldier. Is it that soldiering as a profession has lost its appeal to the public in recent years, and if so, what does that diminution in status mean to the professional officer?

This has been characterized as the Age of Anxiety. The causes are, allegedly, the disintegration of hitherto unchallenged political and economic systems and the decay of that basic stability which was such a marked feature of the Victorian era. The erosion of the times is accelerated and amplified by the great mass propaganda media of newspapers and radio, and the violent flux of opinions threatens the essential balance of society. Can it be wondered if the principles of our professional life and conduct similarly are affected? Is

there an unvarying standard by which to judge ourselves and the profession we follow?

The Elusive Standard

It is a peculiarity of the military profession that, because we wage war only for limited periods of a soldier's life, we must frame our peace standards by reference to a series of general ideals, and perforce test them in the irrevocable realities of specific wars. Nowhere is this disparity reflected more than in the selection and training of officers, and in the adjustment of the selected officer to his profession.

The touchstones of history may afford us a rough guide to the qualities and attitudes which will succeed or fail in given circumstances, but cannot be wholly definitive when the primary factor is that uniquely variable creature—man. It can, however, be stated fairly that the health and morality of the profession rests upon a triple contract between soldier, service, and people, and that each principal's consideration is vital to the contract.

Since 1945 the armies we know best have been acclaiming new, idealistic standards to the world, while bemoaning the low standard of the material offering for officer training. At the same time there has been a steady drift of disillusioned and discredited officers, not all misfits, away from the profession. The reason for these anomalies must be important to the professional health of the army.

Selection and Vocation

A bachelor colonel summarized the situation from the officer's point of view. "To stay in this profession, and to take the rough with the smooth, a man simply must have a vocation for soldiering."

There is great truth in this statement, but it will not suffice alone, because it puts the entire onus on the individual, and in application all that would be needed would be an infallible procedure for selecting soldiers with vocations, and the officer problem finally would be solved. It is

doubtful whether enough embryo military zealots could be found to fill our ranks, even given such machinery.

The truth is that the army, like every great public body, must cut its coat according to the cloth available, in quantity and quality. Thereafter the wear given by the coat largely depends upon the wearer—the army, and not upon the coat—the officer.

The Commonwealth must select or accept the best of the annual crop approximating to the accepted ideal. Rightly, regardless of social, economic, or academic educational antecedents, the empty ranks of our cadres draw in the neophytes through the Organized Reserve Corps, Officers' Candidate School, and the qualification of mature soldiers from the ranks. Such a broad swath cut from the community needs a common denominator—and that denominator is the professional myth—the mission of the officer.

Education for Command

It formerly was the custom to denounce the educated as, *ipso facto*, bad soldiers. Certainly some diehard Indian Army recruiters rejected the educated recruit on sight. William Cobbett's illiterate adjutant in the American Colonies, however, depended on the rare literacy of that youthful sergeant major to read and write his daily routine orders. Since then there has been a complete revolution which insists upon advanced formal education in the aspirant for rank.

Yet Napoleon, himself a graduate of the conventional artillery academy at Brienne, transformed stableboys into satisfactory marshals. Sir William Robertson, by sheer industry and natural adaptability, reached the same rank from similar origins. Formal education apparently is not so essential as a high basic intelligence which must be combined with drive and a love of the profession.

Apart from strictly academic training there is a natural emphasis on the transi-

tional education to fit the entrant for the profession, epitomized in West Point, Kingston, St. Cyr, Duntroon, and Sandhurst. While this is highly desirable it is obviously not a *sine qua non*, as the two previous chiefs of the Imperial General Staff demonstrated; both graduated from the hard school of war in the ranks.

Many soldiers and educationists, our own among them, seek to bring the university to the army, or the army to the university, either by drawing more officers from tertiary education or by upgrading the cultural level of the military colleges. All in all, no one type of formal or military education predicates success, although it is obviously a great help. Without the mental equipment and the inner fire no man becomes a good officer. Where these qualities exist the army can provide the necessary polish. How otherwise could the Prussian Frederick William have transformed his piccolo-playing son into Frederick the Great?

The Physical Element

Napoleon put the physical factor in war into strict proportion, but the officer has his own material prerequisite—the need for a physique equal to the shocks and strains of his profession. Basically, fitness for war differs from purely athletic physical condition. It is accepted that many gladiators of sport prove physically unfit for military service. They may be specialist acrobats before the crowd, but be incapable of prolonged endurance of cold, fatigue, hunger, and danger in the field.

In the Anglo-Saxon world athletic distinction is, of course, prized in itself and can confer a peculiar additional prestige upon a qualified leader. Successful generals such as Field Marshal Montgomery have attached great importance to physical hardihood in all ranks. That eccentric genius Suvorov, who stood daily in his tent, winter and summer, while his batman sluiced him down with buckets of cold water, was another Spartan. He led by

marching alongside his troops, exhorting them, "The bayonet is a hero, but the bullet is a fool," and eschewed the comfort of mounted travel for their example and encouragement.

It is difficult to prescribe the precise function of physical vigor in the equipment of the officer. Nelson could manage without it; many commanders in the intense battles of the last war collapsed from the lack of it. Contemporary accounts of German failures in Russia emphasize the incidence of psychosomatic illness among commanders at critical phases before Moscow and at Stalingrad. It is recorded that the officiating German commander in the Western Desert died of heart failure at the onset of the Allied advance from Alamein, and Rommel hastened back to retrieve the situation.

It is difficult to define the minimum acceptable degree of physical hardihood essential in the officer, since the resultant fortitude is a function of physical and moral qualities. The more there is, the better in general; but without innate mental, as well as physical, toughness an officer cannot be made.

Technology and the Officer

The modern army is highly mechanized and demands great technical excellence of its specialists. Unfortunately, in peace it never attracts enough of these rare and popular birds. Sometimes they are good technicians and bad soldiers; sometimes they are good neither as technicians nor as soldiers. The dual purpose animal, the true soldier-engineer, is the ideal.

For him the army is a happy choice, affording him an education, alternative fields of endeavor, and a freedom which sometimes is denied to his civilian confreres. Earlier technical specialists, such as the oligarchy of artillerymen who practically dominated European armies in the late nineteenth century, and elite German railway engineers enjoyed an especial prestige.

It would seem pertinent to consider whether an electrical or mechanical engineer is not just as qualified for the higher command of modern antiaircraft formations as any other type of soldier, and whether some of our arbitrary distinctions between combatant and noncombatant are not invalid. The value of these essential intellects is too grudgingly acknowledged since, despite the cataclysmic potentialities of modern weapons, man remains the true measure of military might—that is, the man who understands and controls the new media. Given the ethical purpose of the true soldier, the military technologist is the military man of our time, although he still requires the complementary presence of the combat soldier to fulfill his mission.

Personal Faith

God, King, and Country have long formed the basis of the military oath. To inquire deeply into the interrelationship of these profound loyalties and beliefs is a philosophical and psychological exercise beyond the present scope. The assumption that imminent personal victory is inseparable from the Divine Will often may appear to the impartial as an impertinence, if not a blasphemy.

Nevertheless, where the religious belief of the commander, high or low, is firm and clear, it is a stabilizing comfort. In the higher ranks it may vary in form from the clear extrovert professions of a Montgomery to the inner conviction of divine mission which appeared to characterize Haig, or the humble, frank resignation of General Dobbie, the successful evangelical commander of Malta.

These latter-day Christian soldiers contrast greatly with the seeming lack of strong religious belief in Napoleon and Wellington. Even that indomitable soldier John Nicholson, who was himself revered as a minor prophet among his Punjabi sect of Nikalsains, so lacked profound belief as to worry his pious mother.

There have been successful soldiers in history who were apparently devoid of religious belief. Probably Genghis Khan was one, and Frederick the Great appears to have been an agnostic in private life. The old Parliamentary ideal is that of the russet-coated officer who knows why he fights and loves what he knows. In this fluctuating war of ideologies the possession of inner faith cannot but be of immense advantage.

The Officer and the People

An army with a democratic recruitment to all ranks and trades should be in a natural state of rapport with the citizenry. This state often is qualified by some adverse political, historical, and social effects of bias. However strong the mutual ties, they cannot be too strong for the purpose of sound leadership.

If the forces are militias with popular elected officers, or irregulars of any type, the right to lead derives from consent of the led. In regular and pararegular forces there is an absence of direct consent due to the political and departmental channels of its application. This remoteness is best countered by a sound understanding of the officer's status, and is dispelled utterly in the officer with a vocation.

He will recognize his status as public servant and protector of the realm, aware of the national strengths and weaknesses which he must exploit or deny if the army is to succeed. He must be able to handle the voter, the worker, the landowner, politician, parent, and the taxpayer as well as he can handle their sons. Abroad he must embody the best characteristics of his people and army, for he is an ambassador without the benefits of protocol or precedence, the cynosure of the alien eye. In sum he must cultivate affection and respect for humanity, which, after all, is his primary raw material.

It certainly is appropriate in considering the attitude of the officer to the populace to mark the civilizing effects throughout

history of the good soldier. Our own culture is indebted heavily to the Roman soldier for the civilization which he brought, even for the propagation of our Christian religion throughout the known world of antiquity. The modern officer has an opportunity to become a great force for social good in his role of trainer of youth under National Service. The inculcation of manly ideals of service, the establishment of high standards of conduct, hygiene, and social cooperation, and helping in the assimilation of young trainees into the body politic is nation-building work. In the technical sphere the officer is a pioneer of professional "know-how," and often the sole arbiter in all military matters, whether dealing with the civilian layman or the earnest and enthusiastic citizen soldier. In all these tasks lies a worthwhile vocation.

The Officer and the Soldier

The true foundation of military comradeship lies as much in its freedom from mutual profit motives as in the solemn purpose which underlies the military organism. It is not the impending loss of barracks, weapons, manuals, or pay which makes the retiring old soldier downcast, but the fact that the purest form of mutual respect and affection—based on human worth, not cash—shortly will be removed from his daily life. This respect nourishes the sacrificial instinct of the true, born officer, particularly in free societies. It is the traditional give and take of the mess, the platoon, and the sports field which leads to the consolidation of the team in war. Cheap esteem has no part in it.

Although the superior form of officer-soldier relationship is to be expected in democratic societies, it is not necessarily absent in more rigid and mercenary organizations. The Turkish Janissaries and the Praetorian Guard were effective military instruments of great force for many years despite their unpromising beginnings. They thrived as closed corpora-

tions with a strong stimulus from privilege and, by a disciplined and Spartan regime, achieved considerable results until corrupted by power. The officers were protected persons, like the queen bee in the hive. In return they guaranteed power or loot to their soldiers. Thus could a Wallenstein recruit and lead his marauding *condottiere* the length and breath of Europe.

We see a choice between Frederick's Prussian grenadier, who fears his officer more than the enemy, and the Anglo-Saxon ranks in which the young subaltern contrives to evoke an amazing and protective affection. Both systems have been made to work. Respect and affection equally are valuable in the normal relationship of officer to soldier. Certainly no man can aspire to lead who does not feel genuine affection for his men, although, like the Iron Duke, he may not easily make a display of it. The lack of this quality does, in fact, eliminate some who already possess the physical and intellectual attributes of leadership; nevertheless, it is a quality which can be fostered in most normal gregarious humans.

Promotion and Integrity

It is sometimes to the detriment of our professional moves that we have evolved effective but mechanistic systems of military human engineering. Men have been replaced by gradings, intelligence quotient ratings, and collations of Hollerith symbols which are good servants but bad masters. The unique combinations of blood and intellect, of environment and heredity, recede from these methods.

The Golden Age when every battalion could cherish one dunderheaded lance corporal to serve as mail orderly, or even one bumbling but gallant major to keep the troops amused, gives place to a remorseless determinism. This inhibits natural competition and militates against the morale of the average officer, since the apparently less gifted are apprised early of their inadequacy. Here we require reas-

surance of the fundamentally equal value of every good officer to the army.

When the British Army ran as an exclusive club the King's commission was the guarantee of social status, the regiment was an officer's home, and the accidents of promotion were the intruding incidents of destiny. Thus was a happy officer corps ensured. The race is now to the swift, that is the swift in the examination room and staff college. The slower, but perhaps more stalwart, tend to be depreciated accordingly.

The existing system of academic promotion examinations does not reassure the average officer. Some of the written examinations lack objectivity, many of the tests are prone to degenerate into inquisitions; and a system which examines officers in tactics in the written papers and concurrently demands attendance at qualifying tactics courses appears redundant. It is hard to realize that this dry pedantic sloggng is the final rehearsal for what Foch called "the bloody and impassioned drama of war."

Overriding more solid attributes, it is increasingly common in this atomic age to find the commercial element of salesmanship obtruding into army life. There is a depressing incidence of opportunism inimical to a sound professional atmosphere. A common form it takes is of militarism rather than the true military ideal; obsolete military pomp and panoply, display without training, operational, or real morale value. To distinguish and avoid this evil requires a fine judgment, or perhaps taste. It is the vice which ruined the empire of Napoleon III. It is often allied with that dangerous type of ambivalence, in which professional competence is coupled with lack of moral courage, as was exemplified in the German General Staff under Hitler.

The battle for promotion often inhibits the latter sterling quality. At the mention of promotion the subject's conditioned reflexes stifle the voice of conscience. If we

are to have commanders with the martyr courage of a Billy Mitchell, or even the singleness of purpose of a Trotsky, they must be found from men who put the profession first and themselves last, and they will be easier to produce if the process of elimination is convincingly fair and contributes to the general dignity and self-respect.

The Laborer and His Hire

It was cynically observed in the 1930's that "an Indian Army officer fights for his pay." The enemy was the paymaster. In perpetuation of his privilege, which was to grumble, the officer, or more frequently his wife, still grouches about pay. Yet he is privileged, with ministers of religion and professors, to be underpaid by accepted commercial standards; nor should pay be the main criterion of worth, although official opinions have varied.

It once was maintained that an officer should have private means, since it gave him some freedom of action and conscience. Conversely, it has been revealed that members of the British Army Council kept the pay of young officers low because it would be conducive to plain living and high thinking under the discipline of poverty.

The armed services since the last war have granted creeping appreciations in pay to attract more officers. This is based on the fallacy that good officers can be bought literally. Good officers, of course, are attracted primarily by the incentives of a good and satisfying professional life, although they must be sustained by adequate pay. Overemphasis on pay must attract and retain mere time servers. The reward of the good officer is the knowledge of work well done and public appreciation of that fact. Pay baits frequently are used, not to improve the lot of serving officers—who would often prefer better housing, leave, sport, travel, or superannuation—but to attract the raw and gullible wavering recruit.

These misconceptions often arise from misguided civilian attempts to "run the army as I run my business."

Unfortunately, armies have no regular annual balance, and the first major transaction may prove them bankrupt.

Conversely, there are some poor officers who succeed in business because they are motivated by gain and self and possess the necessary acquisitive aptitude. As the officer reflects his parent society, so this materialism bulks larger in his outlook. It must be contained and restricted to its proper limits. The world owes the good officer a decent living, but the moment he grabs for more he is no longer a good officer.

Politics and the Officer

From Caesar to Peron, history is replete with accounts of unsatisfactory soldier-politicians. Cromwell's long shadow embarrassed even the eclectic Marlborough in his political designs. Ulysses S. Grant lost as President the reputation he had acquired on the battlefield, and Wellington as Prime Minister had to suffer the stoning of his house by the outraged Chartists. We must sincerely hope that General Eisenhower is the exception to prove the rule.

The rare soldier-political scientists have not been without effect, as witness Mikhail Bukanin, the former Czarist officer who, in revolt against his profession, launched the anarchosyndicalists upon the world. Political aspirations form no legitimate part of an officer's equipment, particularly in the Anglo-Saxon world.

Nevertheless, times have changed to this extent—that an understanding of politics and of his political responsibilities is necessary to the modern officer. The German command ultimately suffered because it chose to ignore certain obvious political duties in order to preserve its military fabric, and the German nation was dragged into ruin.

In the wars of ideologies nobody can be neutral, and the officer must lead in the political indoctrination of the soldier, provided he keeps to the basic political credo and abjures party polemics. This delicate operation alone calls for good judgment. Political ignorance in the officer, however, is dangerous. As a responsible leader he must know where we stand internally and internationally. A sound education will enable him to put the army and national policy into perspective. He must be versed in politics, but, at all costs, not a political soldier.

Conclusion

The attributes required of the good officer may vary greatly according to the task and the times, but the need for a sustaining sense of dedication increases. Unfortunately, not every officer can be divinely inspired, but given integrity, intelligence, and energy, good officers can be made. The techniques of war become more complex and exacting, but human leadership is still the controlling force.

It is an essential for the well-being of the officer cadre that the public should recognize its own obligation fully. The officer is practically powerless to intervene on his own behalf, and the better he is, the less likely to intervene. Unless he is reinforced by the intellectual and moral certainty of his professional convictions he will prove worthless. Unless he is developed professionally, and is free of unnecessary domestic distraction, he cannot give his best.

In the evanescent worlds of global and atomic war the civil population looks to the army officer for stability to prevent any unfavorable violent change. It is, therefore, axiomatic that his freedom and security to develop should be guaranteed to him in this uneasy peace. The transformation from mercenary to missionary then will be completed and the officer will flourish in rewarded dedication.

Significance of Roads in Impassable Terrain

Translated and digested by the MILITARY REVIEW from an article by former Lieutenant General Hermann Hölter in "Wehrkunde" (Germany) February 1957.

IN NORTHERN Europe the great blocs of power are meshed together in a remarkable way. While Finland is militarily bound to the USSR, Norway is part of NATO. The Norwegian province of Finnmark lies like a cover over Finnish Lapland. This NATO territory approaches close to the Russian long-range bomber bases around and south of Murmansk and on the Kola Peninsula.

The terrain of Europe's upper extremity is, on the whole, passable only with difficulty, largely destitute of roads, and unsuited for land warfare. This fact was experienced by German infantry and mountain divisions during World War II in their approach to the Murmansk Railway. In such wildernesses as Karelia and Lapland limitations are placed on technique by nature.

The forest wildernesses abound in swamps, lakes, and water courses. Except for the few paths and roads the rocky Tundras are hostile to everything. In World War II even formations marching on foot and which were well-provided with pack animals, were able to operate, march, maneuver, and fight off the roads to a limited degree only.

The few existing roads were the axes of military action. They showed the troops the direction and objective of movement and combat. Where no roads existed there were no important military operations, as every terrain-bound unit needs roads if it is to utilize heavier weapons and matériel. Even local (transwoods and trans-tundra) movements require *ad hoc* road construction in order to provide fire support by weapons heavier than those which can be hand carried. Otherwise such local undertakings must be based solely on maneuver.

An adversary who is watchful and on

the alert to prevent outflanking and encircling movements, able to fight in a mobile manner, and organized in depth, will be susceptible to neither frontal attacks nor encirclements in trackless and normally impassable terrain. Encirclements are the order of the day in small-scale mobile combat in woods. But the surrounding of major units which may not tenaciously defend themselves in place is seldom successful.

In the winter rivers and lakes become frozen highways and marshes become passable and may even be traveled with sleds. Units which are mobile under winter conditions (especially ski units) are able to move with relative speed off the roads, and the long nights facilitate troop movements. There is no longer any scarcity of roads. The snow blanket smooths the course, and winter vastly increases the capabilities for movement.

During the summer, operations must be conducted over the few passable routes available. Every ground operation and action requires many vehicles for the transport of heavy weapons, ammunition, and supplies of all kinds.

To how great a degree the few passable roads determine both direction and objective of military operations is shown by a glance at the military events in the northern part of Europe from 1939 to 1945. In the summer of 1941 the allied Finnish and German units worked their way eastward along the same routes on which the Russians made their incursion in the winter war of 1939-40, between Lake Ladoga and the Arctic Ocean.

And again, after the capitulation of the Finns in the fall of 1944, operations were conducted over the old rails through the primeval forest and the Tundra when the Russians set out to attack and anni-

hilate the three German corps fronts in the Karelian Forest and the rocky waste on the Arctic Coast.

In this operation they repeated what the attacker of 1941 had done, but in the reverse direction—a frontal pinning-down of their adversary and pincers attacks. It was entirely clear to the German command how the Russian operations were developing. But in spite of great superiority and an astounding use of technique and matériel on existing roads and the roads they constructed, the Russians achieved no victory—they merely gained ground. The German corps fronts no longer had orders to hold where they had been located since the fall of 1941. Rather, they had liberty to maneuver in an extensive withdrawal movement in order to reduce casualties and escape for new missions.

There were only two routes that could be followed by the German corps in their movement to the west and south—the Arctic Ocean highway, and the frontier highway along the Finnish-Swedish frontier.

After the Russians failed in their all-out assault the Finns attempted to block the way for the two German corps by an attack on their now open south flank. This plan could have been fatal to the two German corps. Barricades, blown-up bridges, and small mobile combat teams greeted the Finns on their few roads, and succeeded in holding them back until the units of the two corps had gotten onto the Arctic Ocean and the frontier highways. Two Finnish divisions which were landed at Tornio to overtake the German forces and block their way, were easily contained by the German motorized combat units.

Lessons Learned

A landbound attacker can hardly succeed in bringing to bay an adversary who is not hopelessly inferior, who is able to fight and maneuver, who correctly calculates the attacker's capabilities on the basis of the limitations imposed by the

scarcity of roads, and who maintains a continuing reconnaissance.

He who permits himself to be caught by an envelopment and his retreat routes blocked runs the risk of having to surrender or of losing at least that part of his matériel that is bound to the roads.

The focal points of the defense are located astride the roads in appropriate breadth because the attacker approaches along the course of the roads and is able to strike there soonest. In the forest and in the open expanses of the Tundra the positions became a system of strong points which possess more the character of a security front. Still farther out is no man's land where only patrols, harassing, demolition, and raiding parties are found.

It is imperative that every infantry unit maintain reserves in readiness behind possible focal points of attack. Copious reserves at the disposal of all commanders are, in addition to strong firepower, a requisite for being able to block the enemy's attack wedges and the claws of his encirclement movements.

Fixed fronts in wooded and impassable wildernesses can be defended only where they are organized, developed, and supplied after the manner of fortresses. Fire capacity must be exploited to the limit, and the field of fire must extend all around and far out. The road network must guarantee a rapid transfer of the reserves to all imaginable focal points. Fixed fronts in nearly trackless and impassable regions have need, therefore, of an abundance of engineer and construction forces.

The attacker must assume that the defender, in mobile combat as well as in a war of position, is attempting to put the foregoing principles into practice. The chances of being able to effect a penetration along the normal axis of movement are small. Success is achieved only by outflanking movements or by encirclement which, of course, must be supplied to the necessary degree if the unit is not to be

halted at the decisive moment with empty weapons and empty stomachs.

Without supply, not even the infantry is able to maneuver and fight for long. It must be supplied by porters or pack animals, over paths or by means of carts or other vehicles over roads. The longer such encirclements, the more indispensable becomes the further construction of roads. The roads which exist in the woods around Ukhta, Kestenga, and Salla, were once named after the commanders of those combat teams who carried out these "horizon-crawl" operations in order to attack the enemy who was defending the "highways" to the Murmansk Railway.

This review of operations and fighting in such a fantastic theater of war may sound, in the age of fully motorized com-

bat forces and atomic combat, like a tale from days gone by. But will war in the future detour around such zones? Will they be taboo? Presumably not!

When there is fighting to be done in regions as trackless as these then tomorrow, as yesterday, it will be the infantry that will have to bear the main burden of the fighting—an infantry that is capable of fighting independently of vehicles, which must largely do without accompanying tanks, whose combat can be supplied and supported but to a limited degree from the air—that can dominate the fighting in primeval and trackless forests and wildernesses. For armored and fully motorized infantry divisions, theaters of war like the cap of Europe are no proper battlefield.

Aviation in Amphibious Operations

Translated and digested by the MILITARY REVIEW from an article by Lieutenant Colonel Bagnies de Saint Marceaux in "La Revue Maritime" (France) October 1956.

A FORCED landing is an operation in which a command proposes to seize possession of a continental jumpoff position from which subsequent offensive operations may be developed. It is highly offensive in character, and is an operation in which one seizes and must retain the initiative. The frequently encountered problem of seeking for an impossible compromise between too heavy a mission and insufficient means does not occur here. Rather, having fixed a mission, the difficulties appear in preparing its execution, determining and assembling the means, and then of putting them into action.

The aim of a forced landing is to bring into contact powerful air-ground forces. Once the expeditionary corps has been landed, installed, and consolidated the landing operations, as such, are terminated. The role of aviation preceding this consolidation can be divided into two phases, the air operations aimed at ob-

taining freedom of action for the combined landing forces—"long-range preparation"—and the tactical air operations during the course of the landing itself—"support of the landing."

Long-Range Preparation

The problem is to conduct operations whose effects will ensure almost complete freedom of action in the air and on the sea at a given time and place, and to interfere to a maximum extent with the defense reactions of the enemy on the land. An additional mission is to secure information for use in the preparation and the initial phases of the execution of the plan.

The forced landing is an operation which lends itself better than any other to planning and has to be prepared in great detail in advance. This plan will be of value only if a great deal of accurate information is available. The role of aerial

photography in such an undertaking is self-evident.

In operations of this scope the difficulty resides more in the formulation of the plan for obtaining the information than in the search for it. It is difficult to conceive the truly encyclopedic magnitude of the intelligence task which preceded Operation *Overlord*.

Air Superiority

The extreme vulnerability of a landing force during its transport and debarkation phases requires air superiority verging on absolute mastery.

But the achievement of an almost absolute mastery of the air is an almost impossible task. The mobility of the air arm is such that the enemy is able continually to render questionable the superiority one is attempting to obtain. This can only be a long-range operation and must be included in the general plan of operations at an extremely high level of command.

In order for the general battle for air superiority to contribute toward creation of a situation which will be favorable for the forced landing, it is necessary to orient the operations in order to obtain an especially clear and indisputable result at the time and place chosen.

The problem is, therefore, not only to reduce the enemy's air means numerically, but to eliminate the possibility of any enemy air intervention at the landing sites.

During World War II General Dwight D. Eisenhower issued the order to destroy the 40 German air installations within a radius of 250 kilometers of Caen while continuing the permanent mission of attacking the landing fields in France, Belgium, Holland, and western Germany.

During the three weeks which preceded the landing, 34 of these objectives were neutralized effectively by means of 6,700 tons of bombs dropped in 4,000 sorties.

The result of this campaign was to

change the numerical relationship of the respective air forces from five to one (approximately) over the entire western theater to 100 to one over the Normandy beaches on D-day.

All that has been said applies to conventional weapons. To follow the example of *Overlord*, which has served as our guide thus far, it is very certain that if the few dozen German planes that reached the beaches had been carrying atom bombs they would have annihilated the Allied Expeditionary Forces.

This may have been what General Omar N. Bradley meant when he expressed the opinion that "... in a future war, whatever it may be, the price one would have to pay for a landing beach would be too high."

Freedom of the Sea

If the execution of a joint operation supposes almost total freedom of action in the air, it is obvious that it is equally indispensable for the joint force to possess a very high degree of freedom of movement on the sea. This applies not only to the transportation of the expeditionary force but also to the logistical chain which will ensure its maintenance.

It will happen often that the air force will have to engage in this battle. The arguments raised by certain leaders of the Bomber Command and the Royal Air Force, when they were forced to abandon part of their action against the German industrial potential in order to aid in the antisubmarine war, can still be recalled. They did not realize that the Allied governments were facing the greatest danger of the hour: that of definitely losing freedom of movement on the seas in the west, an eventuality which would have rendered any subsequent landing on the Continent impossible.

Normally the distribution of missions between the air arm and the naval arm occurs automatically, the former assumes the mission of conducting attacks on the enemy's center of armament manufacture

and naval construction as well as naval and air-naval bases, and the second conducts the battle on the sea.

But the collaboration becomes closer at times, the air arm being able to give its support directly to the naval forces. Throughout the last war, the air arm collaborated in this way in the protection of the coastal convoys. In certain cases, the air arm may even be led to assume missions which belong still more to the naval arm. This was the case with the Twentieth Air Force which participated in the laying of mines in the Pacific, and in the naval blockade of Japan.

Here, as in the case of the battle for air superiority, special operations to ensure freedom of action on the sea will appear as the date for the landing approaches. In the final period of preparation of Operation *Overlord*, attacks were made on all kinds of objectives affecting the safety of communications in the channel, particularly submarine nests and shelters for rapid patrol boats or other vessels capable of intervening in the zone of the landing force convoys.

The support of air and naval forces is perfectly complementary, however. In certain theaters of the Pacific, naval aviation was charged with neutralizing Japanese airbases, thus participating in the establishment of Allied air superiority. These two missions, the ensuring of superiority on the sea and in the air in the zone where the forced landing is scheduled to be made, are closely associated. The part played by each arm depends on the geographic conditions of the theater under consideration and the resulting possibilities of intervention.

Mobility

Until the end of the period of consolidation, the possibilities for maneuver by the two adversaries are extremely different. While the defender has reserves at his disposal and possesses mobility, the assailant is confined to the landing zone

and the elements of his future power can reach him only at an inexorably slow pace. Due to lack of ability to accelerate this pace, it will be necessary to slacken that of the enemy, which can be accomplished only by the air arm.

General George C. Marshall with respect to *Overlord* said:

The preparatory bombing had as its effect, a very considerable disturbance of the movement of the enemy reserves in the direction of the critical zone. It may be said that this aerial action was a decisive factor in the success of Operation Overlord when one knows that the success of an amphibian operation depends on the rapidity with which one's adversaries are able to move their forces to the vital points of the attack and that, even under favorable weather conditions, it would have required the Allies no less than 15 weeks to disembark a number of divisions equal to that which the Germans had at their disposal in northern France and Belgium.

In order to conduct this action against the defender's capacity for maneuver it is necessary to destroy the enemy's combat forces capable of intervening, hamper the enemy's mobility, and deprive him of the possibility of exercising command.

Communications

All of the enemy's combat forces cannot be destroyed of course, but attacks on garrisons, concentrations of tanks, and military stores can reduce the combat capacity of the adversary. As a rule, destruction will be only very partial and cannot, of itself, eliminate the possibility of a reply. Therefore, it will be by attacks on communications and on the means of command that the effort will be made to effect the indispensable paralysis of the enemy.

Attacks on communications depend to the highest degree on the nature of the theater in which the action is planned. In the case of an island, for example, there will be no object to such an attack since

action to control the sea will achieve the same result. On the other hand, in a continent such as Europe which has a dense and well-organized network of communications, the undertaking will be a veritable "war within a war."

The disorganization of the enemy's communication system and supplies was one of the principal missions of the aviation in the preparation of *Overlord*. The Allied plan comprised attacks on the railway network in France and Belgium in a radius of about 180 miles around the landing zone, and a long-range blocking by the destruction of the highway and railway bridges over the Seine and the Loire.

The multiplicity of the possible objectives in itself imposed a limitation. After the examination of several solutions the command decided to give priority to attacks on the motive force of the network. A list of 80 objectives of this category was established (that is, locomotive round-houses and repair shops). The aerial campaign against these objectives was launched on 9 February and terminated on 6 June. During these four months 66,000 tons of bombs were dropped in 22,000 sorties.

These attacks against the motive force of the railroads were complemented by fighter-bomber attacks on the traffic itself (trains, locomotives, and switchyards) from 21 May on. They represented 4,000 sorties without counting the machinegun strafings by the escorts of bombers returning from their missions.

The long-range blocking action by the destruction of the bridges across the Loire and the Seine began on 21 April. Since bombers required an average of 600 tons of bombs to destroy one bridge, and 150 to 200 tons sufficed for fighter bombers the latter carried out the attack. It required nearly 120 attacks totaling 5,000 sorties and more than 4,000 tons of bombs to fulfill this mission. On the Seine alone, 24 bridges were destroyed.

The efficacy of this campaign against

the communications is well-known. General Carl Spaatz, who commanded the American strategic aviation in Europe, writes:

... the results were excellent. Not only were the enemy's troop movements greatly retarded, the French railways deprived of coal supplies from Belgium, and great damage inflicted on rolling stock and installations, but the efficiency of the entire railway system was seriously diminished, in fact, to such a degree that at the time of the landing, traffic dropped to but 13 percent of its normal on the northern network and to but 30 percent in France as a whole.

From the German side, Von Rundstedt states:

The principal difficulties with which we were met at the time of the invasion came from the systematic preparations made by your air forces, the destruction of the principal routes of communication and, in particular, the destruction of the railway junctions. We were prepared for numerous eventualities . . . all that was of no help whatever and was impossible of realization due to the destruction of the railways, railway stations, and installations, and so forth. . . .

Doubtless there were other causes for the failure of the defense in Normandy, but the disorganization of the communications certainly played an important role.

In the future the preparation of a landing would require, as in the past, powerful intervention against the enemy's ground communications. But the considerable development of air transportation has profoundly modified the problem of the mobility of the reserves.

Attack of Command Means

To prevent the successful exercise of command by the enemy, efforts may be directed toward cutting off the sources of his information and interfering with the dissemination of his orders. For aviation

this includes attacks on his radar installations, command posts, and means of signal communication.

Although last hour attacks suffice for these objectives, as a rule their number at times will necessitate their neutralization a considerable time before the landing date.

For example, it required a month to carry out the antiradar program preceding Operation *Overlord*. In this campaign 80 percent of the German radars between Guernsey and Ostend were knocked out.

Independently of these missions of destruction directed against radars, measures of "deception" and electronic counter-measures must be mentioned. Although these measures are not conducted by aviation alone, the latter's role in this particular form of preparation is not negligible, as is proved by the fact that one wing of the Royal Air Force was devoted exclusively to this type of mission.

Execution

In order to carry out successfully the various campaigns whose ensemble constitutes the "long-range preparation," the aviation must possess adequate air superiority. Once more this emphasizes the fact that the mission of achievement of freedom of action of the landing itself constitutes only a part of the over-all battle for air superiority.

It follows from this that, although the execution of the landing operation may be confided to a command of the theater of operation level (or even of a lower level), the long-range preparation can be assigned only to a superior echelon. It is likewise true that a forced landing cannot be undertaken at the beginning of hostilities unless mastery of the air is ensured at the very outset.

Furthermore the aviation must be within range of the target zones to be capable of acting. As obvious as this remark appears, this is a "must" which has the most decisive impact on the choice of the

places that are to be attacked and on the operational plans of the landing itself.

Finally, the necessity of keeping the place of the landing secret will place a heavy burden on all the phases of preparation. Operational analysis, in which the enemy will surely engage, must not in any case permit the enemy to orient his reactions. Such a result can be obtained only by multiplying objectives and very considerably extending the zone subjected to the preparation, in order to avoid discernment of a preferential sector.

The preoccupation was so intense from the very outset of the plans for *Overlord*, that in the preliminary plan devoted to the preparation, one finds no less than once on every page the words: "... avoid drawing the enemy's attention to Caen."

It is easy to see that these large-scale diversionary operations will require a considerable portion of the available matériel since they must continue from the beginning of the long-range preparation until the moment of the assault—this marking, obviously, the end of secrecy.

Support of the Landing

It is necessary to provide protective cover against enemy aviation from the phase of embarkation in the ports to the consolidation of the bridgehead. The vulnerability of the friendly forces during this period renders it necessary to carry this effort toward security to extremes, even in cases where the long-range preparation has paid off by a great weakening of the enemy air.

The continual need for aerial cover necessitates possession of greater numbers of fighter aviation the farther it is obliged to operate from its bases. Doubtless ship-based aviation will find a choice mission here. It is certain, however, that this unfavorable situation will not be truly eliminated until airbases have been established in the bridgehead. At the same time it still will be necessary that means for detection and combat of enemy air

permit maximum exploitation of the units engaged.

During the first hours of the assault, speed has precedence over secrecy or even precision. Little or no effort will then be made in the direction of discretion in the transmission of aerial information, but rapidity—as by the use of radio transmission—is all-important. Photography will not possess full value until the later phases of the affair.

Fundamentally aviation fire support of a landing operation does not differ from that of any other offensive operation. However, it should be noted that the forces that have been landed have to wait a rather long time before they will be able to make use of their artillery. The fire of the aviation will, therefore, be used against a multitude of objectives that would normally be dealt with by the ground forces. Much of the artillery support, also, will be by the naval surface vessels.

These missions do not exclude, of course, all the missions which maintain the effect of the long-range preparation.

Conditions of Execution

We have had occasion to remark that during the phase preceding consolidation, the power of the disembarked forces can grow only at the inexorably slow tempo of the landing.

On the other hand whatever the effect of the long-range preparation may have been, the defender benefits from all the flexibility inherent in the fact that he is maneuvering in his own environment. Moreover, not being bound, as is the aggressor, by the imperatives of a predetermined and unchangeable transportation plan and mission, he enjoys the freedom of adapting himself to circumstances.

It is, therefore, only from the aviation that one will be able to expect the flexibility and power necessary for maintaining a balance of power constantly favorable to the assailant.

While a precise program guided the

aviator during the operations which prepared the landing, immediate adaptation to events as they occur becomes his *raison d'être*, for he alone remains capable of discovering and attacking unexpected objectives. Along with the exercise of the capacity for improvisation in the vicinity of the landing zone, the air force must methodically continue the battle it has been waging to deny the enemy free use of the air and surface communications.

We see that this phase of the operation requires the engagement of extremely numerous aerial means. The only concern one will find himself freed of will be that of diversion which now becomes meaningless.

It is evident also that the more distant the bases of departure, the more favorable to the effectiveness of the support missions will be the establishment of airbases in the bridgehead itself.

Nuclear Weapons

Nuclear weapons favor the assailant in that they increase the power of his air preparation and permit the rapid neutralization of a drop zone before an airborne operation. On the other hand, they constitute an extremely grave menace to him. No degree of air superiority can guarantee an absolutely impermeable defense.

If a certain degree of dispersion can minimize the danger of a 20-kiloton bomb, it is difficult to say what the disposition would have to be to limit the damage done to a landing fleet by an H-bomb of several megatons.

It would seem that the atomic preparation phase would have to be very brief and intense, if only in order to realize the maximum surprise effect in the face of the possibilities of an atomic reply by the enemy.

Finally, we are warranted in asking ourselves whether (independently of all questions of technical possibility) the forced landing still retains a place in a general atomic war, especially if this form

of war is as rapidly decisive as the majority of authors believe.

Transport Aviation

The evolution of transport aviation in the sense of increased flexibility of utilization and carrying capacity imparts a new physiognomy to certain aspects of landing operations. These include the possibilities of invasions being either dense or dispersed, in the open or secret, of short or long range, and the partial elimination of the encumbrance constituted by a rigidly planned supply.

In addition, the transport plane, richly endowed with means of detection and signal transmission and already employed as an advanced radar station, becomes a frequency modulation relay, a flying tactical control center, and, perhaps, a joint operations center.

The helicopter, thanks to which small units can be rapidly distributed over large areas and there retain a high degree of mobility, will play a role of constantly increasing importance. The program of the United States Marines, aimed at transportation by helicopter of all their battalions by 1959, is significant in this regard.

On the other hand, the possibilities of air transportation increase the mobility of the enemy reserves, rendering illusory all the long-range preparation to which we just devoted so much attention.

Guided missiles also will offer great possibilities to both the assailant and the

defender. For the attacker the problem of aerial cover is simplified by a few warships carrying batteries of ground-air missiles. The generalization of the automatic target-seeking missile perhaps will render the defense impermeable to the piloted plane.

But won't the use of some atomic super V-2 weapon reestablish the advantage apparently lost by the defender? Unless electronic calculators unleash, in their turn, in a thousandth of a second the automatic battery of antimissile missiles . . . which in turn . . . *ad absurdum*.

Conclusion

In the face of the many possibilities offered to the assailant and the defender by the new techniques it would be very dangerous to conclude categorically either that the forced landing would survive or will disappear.

However, it seems that this type of operation should find, in the third dimension, the flexibility of maneuver it so badly lacks on the surface.

However it may be, and in the face of the doubts which assail the minds of even the best informed as regards the future of amphibious operations, it seems wise to adopt measures that will permit us to defend effectively the terrain we now possess and not have to "embark." In this way we should avoid being forced to concern ourselves someday, with anguished disquietude, over the delicate problem of an amphibious operation in an atomic war.

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Guerrilla Warfare

Digested by the MILITARY REVIEW from an article by Major C. H. A. East in the "Australian Army Journal" October 1956.

ALTHOUGH the word "guerrilla" was used first in the Napoleonic Wars, guerrilla warfare is as old as war itself. The first guerrilla war was fought in China in 360 B. C. when the Emperor Huang finally defeated his enemy Tsi Yao by employing guerrillas. British history records evidence of the guerrilla activities of the Britons led by Caractacus, who harassed the Roman legions from his mountain stronghold in South Wales. Later, Hereward the Wake caused King William great trouble with his raids and ambushes. Throughout the Middle Ages and up to the middle of the eighteenth century the Scots engaged in a series of guerrilla actions against their stronger English opponents and were not subdued completely until 1745.

During the American Revolution the form of guerrilla warfare took a new turn. Until this time war had been the affair of the state but now it became a national matter because the private citizen became involved. Armies began to find themselves opposed not only by armies but by a hostile people as well.

Eighty years later a man named Karl Marx put this hitherto revolutionary theory of warfare in a nutshell by stating:

A nation fighting for its liberty ought not to adhere rigidly to the accepted rules of warfare. Mass uprisings, revolutionary methods, guerrilla bands everywhere; such are the only means by which a small nation can hope to maintain itself against an adversary superior in numbers and equipment. By their use a weaker force can overcome its stronger and better organized opponents.

Throughout the nineteenth century the British Army was fighting actions all over the world, most of which could be de-

scribed as guerrilla wars. Yet when the largest outbreak of all occurred in South Africa in 1899 they had not learned their lesson. Before examining certain guerrilla campaigns of the twentieth century, however, let us first study the characteristics and method of employment of guerrilla forces.

Characteristics

Guerrillas never give pitched battle if it can be avoided. They always seek to obtain a local superiority, and exploit the element of surprise to the utmost. Their objective is always the weak link in their opponent's chain.

They attack suddenly, disappear, and then reappear some distance away a day later. The essential difference between guerrillas and normal ground troops can be explained in the word *mobility*. They travel light. The rifle, submachinegun, and grenade are their weapons. They have no "administrative tail" to encumber them.

The aim of guerrilla warfare is to reduce the effectiveness of the opponent's regular forces. It is achieved best when conducted behind enemy lines to further specific large-scale operations by regular forces.

There are three main situations necessary to the conduct of guerrilla warfare. These are terrain, the political situation, and national conditions. They must be taken into account in any theater of war, both in organizing our own guerrilla activities and in appreciating the probable conduct and scale of similar activities by the enemy.

The terrain best suited to this type of operation are mountains coupled with either forest or jungle, or flat country well-covered with either jungle, forest, or swamp.

Political Situation

From the outset a guerrilla force must have the full backing of its own or an allied government to ensure that the necessary supplies of equipment, weapons, and personnel arrive in sufficient quantities in time for operations. The immediate political sympathies of the civilian population in the area must be in close enough relation to the guerrilla force to ensure loyalty and continuous support.

Policy at the highest military and political level must be established for the organization and direction of guerrillas during hostilities and afterwards. *Guerrilla forces at the end of hostilities must not be allowed to fall into the hands of undesirable political elements and be used against the forces who created them*, for example, the Malayan Peoples' Anti-Japanese Army (MPAJA) in Malaya.

The surest method by which such control can be retained is to provide the trained personnel and organization from the regular army to establish a formal guerrilla organization when hostilities begin.

It is desirable that the civilian population possess a strong national desire for independence and a hatred of the enemy. Hate can be stimulated by propaganda, although this characteristic should be strong in areas which have been occupied by an aggressor.

Recent Examples

After the heavy British defeats at Colenso, Stormberg, and Magersfontein in the early 1900's the government dispatched Great Britain's premier soldier, Lord Frederick S. Roberts, to South Africa. In his decisive victory at Paardeburg he captured a Boer force of 4,000 men, and any hope of a Boer victory was gone.

However, hopeless as the prospect was, the enemy fought on for another two years. Those two long years of guerrilla warfare against such a past master in the art as the Boer should have taught

the British soldier valuable lessons for the years to come.

The Boers were all mounted and extremely mobile. Every man was a sharpshooter and an expert at taking cover. They did not wear a regular uniform which permitted them to double the part, at a moment's notice, of a first-class fighting man with that of a peaceful civilian. The Boers favored ambushes and booby traps, and they were apt to be a little careless in their use of the white flag. This taught the British soldier that he must be prepared to fight his opponent with his own weapons.

The British soldier learned the hard way. The Boer taught him the importance of mobility, intelligent scouting, and skillful use of ground and cover. He learned that it is not always desirable to attack in drillbook formation but that troops must learn to fight in small detached groups, where each man will have to think for himself. Eventually the pupil learned his lessons to the discomfiture of his teacher.

The operations of Colonel Lawrence and his Arabian forces in World War I are a classic example of irregular or guerrilla troops.

The real weakness of the Turks in the Middle East was based upon two factors—the restlessness of the subject peoples, especially the Arabs, and the brittle and tenuous lines of communication by which the Turkish Empire was controlled.

Lawrence and his Arabs leapfrogged Turkish strong points, cutting the rail communications, raiding and harassing the Turks, and keeping them immobilized. There he used his forces to isolate the main Turkish armies in Jordan, in conjunction with an attack on these armies by British regular forces. The supreme lesson of Lawrence's triumph was that granted mobility, outside assistance, time, and an idea which gained the sympathy of the civil population, victory rested with the guerrillas.

History does not reveal very much of the struggle which went on inside China from the early 1920's until 1949. The struggle between the Chinese Communist rebels and the Nationalist forces became three-sided when Japan, with her well-trained and equipped forces struck at China in the years before the Second World War. A united Chinese front was formed in 1937 by the Kuomintang and Chinese Communists which gave Chiang Kai-shek the assistance of the Chinese Red Eighth Route Army, the best fighting formation in China. It owed its high reputation and success to the widespread adoption of guerrilla warfare based on the teachings and experience of the leader of the Chinese Communists, Moscow-trained Mao Tse-tung.

The Chinese forces gave up the cities to the Japanese, but were never dispossessed of the provinces throughout the entire war. The Chinese obtained arms and ammunition from the United States and from their enemies the Japanese, harassed the enemy's lengthy lines of communication, and cut off and destroyed small garrisons. They developed their own mobile guerrilla industries in the interior, and they had the backing and support of the people.

Mao Tse-tung foresaw three stages in the war against Japan. The first stage would be Japan's advance and China's defensive retreat. In this retreat great reliance would be placed on guerrilla tactics. Once this maneuvering was completed the second stage was to be one of watchful sparring—guerrilla units would harass the enemy 24 hours a day until the Japanese were forced to maintain troops all along their lines of communication and bases. Then the third stage would begin, when the mobile counterattack would be launched after the enemy became overextended and exhausted. Again guerrillas would come into play by continuing their harassing tactics and cutting off the en-

emy's retreat. All this came about as Mao forecast.

The German armies in Russia suffered more damage from guerrillas than from all the modern paraphernalia of warfare. They could match each Soviet weapon with similar or superior weapons of their own, but they were almost powerless against guerrillas.

When the German armies invaded the USSR in 1941 they did not anticipate large-scale guerrilla activity, and they did not in fact encounter it at first. However, soon the Germans found themselves fighting on two fronts—against the Soviet armies in the forward areas and against Soviet guerrillas deep behind their lines.

The Soviet guerrillas waged the most extensive and effective irregular campaign in history. In two years of this warfare in the rear of the invaders, the guerrillas killed more than 300,000 Germans. During this period 3,000 trains were derailed and thousands of bridges were destroyed. The number of tanks, armored cars, guns, airplanes, trucks, and dumps destroyed by the guerrillas ran into many thousands. In the summer of 1942 it was established that 144 SS battalions and 15 field divisions were operating solely against the guerrillas. In the spring of 1943 the Germans launched large-scale attacks against the guerrillas in the Briansk and Minsk regions in which 70,000 troops were employed.

Guerrilla attacks on enemy communications were an outstanding factor in the Russian success. The guerrilla link with the civil population provided them with a splendid source of information on German dispositions and troop movements. Their mobility, knowledge of the locality, use of surprise attack, and the separate withdrawal of individual units from battle were all factors which aided in confusing and harassing the enemy.

This is the major lesson of the German-Russian Campaign. Guerrilla warfare has come to stay. It has revolutionized the

conception of war. A regular army with guerrillas as its auxiliaries not only has a hard-hitting fighting force, but also an outstanding intelligence service which makes it practically impossible for the opponent to conceal his troop movements and intentions. In the postwar years all Soviet satellite states without exception have formed their own guerrilla brigades.

In March 1945 the Japanese decided to eliminate the French forces in Indochina, and set up a national government of their own choice. When this took place, various Nationalist and Communist groups organized themselves and took over large parts of Annam and Tonkin. The Allies parachuted weapons, radios, and instructors into the guerrilla units which soon gained a degree of combat strength and efficiency. The Communist groups under their Moscow-trained leader Ho Chi-minh not only had the strength but the leadership to exploit the situation. After the fall of the first atom bomb on Japan, Ho Chi-minh's guerrillas became the Vietnam Liberation Army, and the new government installed by the Japanese was overthrown by an organized Communist onslaught.

Speedy action by the French in recouping Indochina at the termination of hostilities forced the Vietminh to dissolve its divisions and regiments in the south and return to guerrilla warfare. In December 1946 the Vietminh attacked French installations throughout Indochina, and the war between France and the Vietminh had begun.

Although the French initially had great difficulty in supplying isolated garrisons and maintaining bases, General Jean Leclerc, with a judicious use of armor, parachutists, and air transport, relieved the pressure. However, the French forces were too weak to follow the guerrillas and defeat them in the mountains.

This stalemate proved a welcome respite to the Vietminh. The guerrillas were reorganized on a battalion basis, officer

training schools were established, and a welcome flow of ammunition, equipment, and instructors was received from China. Soon the French were faced with 30 regular Vietminh battalions in the north while in the south guerrilla units cut off Saigon from the hinterland and occupied Indochina's rice bowl.

The Vietminh then overreached themselves by apparently failing to appreciate the three basic principles for Communist warfare in Asia laid down by Mao Tse-tung. They were:

1. Yield any town or terrain you cannot hold safely.
2. Limit yourself to guerrilla warfare as long as the enemy has numerical superiority and better weapons.
3. Organize regular units and pass over to the general counteroffensive only when you are sure of the final victory.

The Vietminh high command mistakenly had underestimated French capabilities and passed prematurely from step 2 to step 3 with disastrous results. This mistake was not repeated. Guerrilla warfare was continued until the end of 1953 before the guerrilla forces were ready to be converted to regular forces and launch the counteroffensive, with the results that are now history.

This campaign demonstrates the importance of getting outside assistance to guerrillas. The Vietminh, apparently receiving more aid than the Malayan terrorists, made greater gains. Again the people of Indochina, although not all Communists, instead of aiding the French, remained neutral and aloof. Finally the French military rigidity—the pillbox technique—in dealing with the Vietminh was inadequate. No war, and particularly no guerrilla war, can be won by remaining on the defensive. The French would have been better advised to adopt Mao Tse-tung's advice and fight the enemy with his own weapons, that is, the employment of antiguerrilla or special forces.

In February 1943 General Orde C. Win-

gates led a force of 3,000 men with mules and bullocks across the Chindwin and Irrawaddy Rivers into the rear of the Japanese area of operations in Burma. He proceeded on a campaign of harrying Japanese communications, sabotaging dumps, and generally diverting the Japanese from their main efforts to concentrate and plan for the invasion of India. His Long-Range Penetration Group—known more familiarly as Chindits—were supplied by air and retained radio communication with Delhi. Over 2,000 of the force returned to India at the end of May leaving approximately 500 prisoners with the Japanese and 500 casualties.

The advantages gained from this campaign were:

1. The conviction of senior officers that this new theory of warfare would work.
2. Increased knowledge of the Japanese methods and reactions.
3. The cessation of the Japanese campaign against the Kachin Levies.
4. The projected Japanese infiltration beyond the Chindwin did not eventuate.
5. The serious interruption of enemy plans, and confusion throughout Burma which the penetration caused, prevented the development of Japanese offensive intentions at that time.

Future Guerrilla Warfare

Guerrilla warfare has been developed to near perfection by the Communists, and in any future war we will have to fight against guerrillas in our midst. Because guerrillas generally were fighting for us in the last war, we have not fully understood the implications of this form of warfare. We encountered guerrillas or bandits in postwar Malaya and Kenya, the experience of which, though inconclusive, should convince us that we must waste no time in closing the gap of knowledge and experience of this form of warfare between ourselves and our potential enemies.

This is the major lesson from the past;

more specific lessons which have emerged are:

1. The need for training the regular army in both guerrilla and antiguerrilla measures now.
2. The preparation and planning in peace of an organization to control, equip, and support guerrillas before hostilities commence so that guerrilla forces can go into action at the outset.
3. Coordination of the activities of guerrilla units so that their efforts are directed to the attainment of the aim of the regular forces' commander.
4. The necessity for ensuring the loyalty and support of the civil population for the guerrillas; and a corollary in the case of enemy occupied territory, not to involve the civil population directly in case of reprisals against them.
5. The value of air support in delivery and evacuation of guerrillas and the maintenance of forces.

The Atomic Weapon

Undoubtedly great importance will be attached to the need for dispersion in any future war which includes the employment of atomic weapons. This will apply not only to formations and units but to supply installations, dumps, base areas, industries, and ports. In addition to this dispersal, units and facilities will be reduced in size to offer a less attractive atomic target.

The destruction of facilities and sources of supply in rear areas is an important role of guerrilla troops. This dispersal in area, and subsequent increase in number of installations by subdivision into smaller targets, will force the defender to deploy troops more thinly on the ground to perform this task or compel him to increase the number of protective troops. Either case ensures the success of the guerrillas' aim.

Guerrilla forces were rarely a target for enemy artillery during the last war. This was because of their method of em-

ployment—operating in small bands, taking advantage of cover provided by terrain and darkness so that no worthwhile target was presented. If such methods continue to be followed there will be no direct threat to guerrilla forces from atomic weapons. This safety will be even more accentuated in the protective jungles of Southeast Asia. Although atomic weapons are not apt to be employed against guerrillas, the destruction and devastation caused by such weapons could be exploited to a great degree by guerrillas.

The need for early warning by regular commanders of the enemy's intention to employ atomic weapons is more vital than in the past. The operation of guerrillas in rear areas as a reliable and speedy source of information will be of great assistance in this regard.

It is not too fantastic to imagine that if these weapons are used in any great quantity the regular armies of either side will be forced to break up into small groups, for the guerrilla method of operation constitutes the best means of protection against atomic attack.

Enemy Guerrilla Employment

At the outset of a future war it is almost certain that enemy guerrilla activity will be directed at the free countries from within their borders before a shot is fired against enemy regular forces. Initially it is anticipated that their efforts would be directed to sabotage of industrial and service installations, the fomentation of civil and industrial strife resulting in a dislocation of our war effort, and an attack on the morale of the people through these methods allied to propaganda.

To the Communists, all means are justified by the end. We would have to be on our guard to prevent assassination of our leaders, both military and political. The poisoning of water facilities can be carried out by one guerrilla; a small atom bomb can be planted by guerrillas in crowded cities, busy ports, or important

factories. We have been warned by Stalin, who announced to the world in 1934:

It would be the most dangerous war for the bourgeoisie, because such a war would be waged not only at the fronts but also in the rear of the enemy. The bourgeoisie need have no doubt that the numerous friends of the working class in the USSR, in Europe, and Asia will be sure to strike a blow in the rear of their oppressors.

These "numerous friends of the working class of the USSR" are otherwise known as Partisans of Peace. They are a species of the sadly familiar collaborator type. Signor Terracini, Communist member of the Italian Senate, said in 1951 of the Partisans of Peace:

They will strike a blow against the rear of their own countrymen, they will instigate civil war, they will form national-revolutionary guerrilla unity, they will wage war on the home front; in short, as partisans of war in defense of freedom, they know what is their duty.

The writing is clearly inscribed on the wall. Let us take warning and act before it is too late.

Antiguerrilla Action

If we act before the outbreak of hostilities the antiguerrilla preliminary stages fall outside the task of the armed forces. The internal security service must have a detailed knowledge of the Communist organization throughout the country and be able to apprehend any member at any time. Thus the government can seize immediately those agents or traitors who could so easily pave the way for the invader.

By our own use of propaganda, the civilian population must be educated to appreciate the dangers from the renegades within their midst, and the harm caused to the war effort by their actions as unwitting dupes in staging industrial unrest.

The enemy guerrilla force has to be

dealt with after hostilities have been joined. It is essential that the army be trained to combat guerrillas based on a study of their methods and equipped accordingly. *There is no need for special antiguerrilla units.* With well-trained combatant troops, mobile, with good communications, a good intelligence service, and air facilities the enemy guerrillas can be defeated. To carry out this role, however, the army needs to be trained in this function, and a manual of guerrilla warfare should be written from which the army can train and operate.

Conclusion

From the foregoing it should be evident that guerrilla warfare is an important adjunct to the Communist over-all plan of waging war. From the theories of Mao Tse-tung, published in 1937, Stalin perfected the employment of this branch of warfare against the Germans. The success attendant on this experiment has resulted in the wholesale adoption of guerrilla units and methods by Communist countries and satellites in the postwar years.

Modern dictators have the habit of writing their future plans and having them published. The classical example was that of Hitler who, in 1923 in *Mein Kampf*, warned the world of his plans and intentions. The Japanese were equally explicit, and in 1927 announced their intention of conquering the Far East. This literary output includes prophecies from such well-known Communists as Marx, Lenin, Stalin, and Mao Tse-tung and their warning is just as precise and ominous to the free world.

There is an urgent necessity for the free nations to plan to meet the threat of guerrillas in any future war. A training manual should be prepared in order that the army—not only those of the Commonwealth, but the armies of all the free nations—should go into a future war prepared to deal with the guerrilla menace, and to use guerrillas for their own purposes.

Let us take note of the lessons of recent history, and the contemptuous avowals of our potential enemies. We must act now—tomorrow will be too late.

Change and No Change in Russian Foreign Policy

Digested by the MILITARY REVIEW from an article by Willy Bretscher in "Swiss Review of World Affairs" (Switzerland) September 1956.

This article was prepared prior to the July 1957 shift in Soviet High Command structure.—Editor.

CHANGES which have occurred in the foreign policy of the Soviet Union since the death of Stalin have manifested themselves in a series of not altogether unspectacular events, both fascinating and confusing to world public opinion. In view of these events it is said that the Soviet Union has proceeded to liquidate the cold war of the Stalin era and to conduct a "policy of relaxation" in the field of international relations. Even if one puts this

word "relaxation" (and other words used in the same manner) in quotation marks to denote that it is terminology launched in Moscow with definite propagandist intentions, it still gives a false picture of the problems involved.

Not even a very profound skepticism over the motives and purposes of the Soviets' "policy of relaxation" can always be trusted to keep the Western observer from being misled by this terminological distortion. It gives a one-sided bias to his thinking and distracts his attention from the real heart of the matter. Neither is it necessary to mention the far greater

damage done by the automatic adoption of uncritical reproduction of these slogans in the press and in political discussion in general.

What Has Changed?

To carry out a full investigation and evaluation of the changes which have taken place in Soviet foreign policy since the death of Stalin, we should first determine just what, really, has changed. A mere quarrel about words on whether the cold war has been liquidated or is continuing, for example, is utterly sterile if the exact meaning of this cold war has not been defined in advance. From the labels of the political facts we must proceed to the facts themselves which, in the present case, force us to an entirely unequivocal and clear-cut conclusion: The new rulers of the Soviet Union, the successors of Stalin in the "collective leadership," have, in fact, abandoned the cold war of the Stalin brand—the cold war, that is, in the definite and specific forms practiced by Stalin—and have replaced it with the so-called "policy of relaxation."

That is the most important change which has taken place in Soviet foreign policy. It has involved an astounding transformation in the conduct, behavior, methods, and style of Soviet diplomacy. It would be even more impressive if it were not so obtrusive, so apparently artificial, and, at times, of such a bear-like massivity. There can be no doubt that the form of foreign policy has changed, that it has changed suddenly and drastically, and to such an extent that a certain "normalization" of the relations of the powers involved in the East-West conflict can be observed.

What Has Not Changed?

Immediately, however, the question of what has *not* changed in Soviet foreign policy must be examined. The list of the great problems that remain unsolved despite the so-called "policy of relaxation," the generally uncompromising political

attitude, and the continued ideological aggressiveness of Moscow toward the Western World provide us with an answer—they show that the substance of Soviet foreign policy has been left untouched by the changes in method and style.

It is by new ways and means that the new rulers in the Kremlin are defending the orbit of their power and influence as determined by the military and political conquests made by Russia in the war and the postwar period; but their energy and *intransigence* in no way fall short of that of Stalin. The most convincing proof is their German policy, as unyieldingly opposed to reunification as ever, and as exasperating as they could wish with its cynical reference to the *de facto* existence and "coexistence" of two separate German states.

The Soviet "policy of relaxation" is designed not only to maintain the *status quo* by seeking to persuade the Western Powers to accept and recognize USSR hegemony in eastern Europe and a part of Germany, but pursues still larger ambitions. What Stalin—whose cold war first provoked the free world to unite for a common defense—failed to achieve as a result of the countermovement of the events he set in motion, his successors now want to bring about by their "policy of relaxation." This is the political disintegration of the West, the dissolution or paralysis of its military alliances, and the withdrawal of American and British troops from the European Continent—thus making way for the unchallenged hegemony of Russia throughout that area. The realization of these aims would set in train a process ending sooner or later in the sovietization of all Europe.

Blueprint for Western Europe

The degree of success the Soviets have achieved already with their "policy of relaxation" and constant assertion of peaceful intentions is bound to encourage Stalin's successors. It is evident that the mere

appearance of a reduction of Soviet pressure suffices to weaken the political cohesion of the West and to give rise to phenomena of dissolution, such as an increase in unrealistic "neutralism."

Since the broad masses in western Europe have, in the past years, viewed the Bolshevik danger almost exclusively as a potential aggression by armed force, the reduction or elimination of an imminent threat of war tends to result in a decrease of vigilance in every respect—moral, political, and military. This reaction, which the statesmen seem to catch from public opinion, is caused by a deplorable disregard for, or ignorance of, the peculiarities of Bolshevik dialectics. A closer look at these things will demonstrate the unfortunate aspects of the "relaxation" of vigilance in the West.

As Franz Borkenau explains in his book, *Communism in Europe*, the Communist does not know or acknowledge the traditional sharp juxtaposition of "war" and "peace," since from his point of view there is always some sort of war going on between his world and the world of others. War by means of armed force, therefore, is not the answer to political questions for him. For the Communist, armies, military power, and threats of war are coordinated with, and subordinated to, a political over-all concept which aims at achieving the desired revolutionary upheaval without a "war" in the classical sense.

Typical examples of Bolshevik ideological-political conquests can be found in the recent history of several eastern European countries where the mere presence or geographical proximity of the Red Army was enough to bring to a triumphant conclusion a prolonged phase of thorough political boring from within. There can be no doubt that the present Soviet "policy of relaxation" seeks to create the psychological and political prerequisites for a repetition of this process in western Europe.

Russia's disarmament gestures—which do no harm whatsoever to the immense military preponderance of Russia on the Continent—are aimed at causing the peoples of Western Europe to relax their armament efforts, reduce their general vigilance toward the totalitarian colossus, and abandon their efforts on behalf of their common defense and political integration. Should this happen they would be bound to drift, imperceptibly and yet relentlessly, into a situation where these countries, isolated from each other, would one at a time come face to face with the united pressure of the Soviet bloc. And that, in all its essential elements, would be exactly the same situation as prevailed from 1946 to 1948, and which cost the freedom and independence of the eastern European peoples, one after the other.

The New Style

The present Soviet foreign policy differs remarkably from the characteristic "one-track mindedness" of Stalinism in that it makes use of all possible roads, lanes, tracks, and every suitable vehicle. It has become more flexible and adaptable; more imaginative and more audacious.

It is indicative of the liveliness and versatility of the new masters of Russian foreign policy that they have succeeded in realizing a diplomatic and political program embracing such astounding and diversified items as the withdrawal from Austria, the public act of contrition and penitence in Belgrade, the Geneva high-level conference, the invitation of Konrad Adenauer to Moscow, the propaganda tour of Nikolai Bulganin and Nikita Khrushchev in Asia, the subsequent visit of the two Soviet leaders to the British capital, and Shepilov's journey through the Middle East.

A careful observer of the new ways and means of Soviet foreign policy will not fail to discover its less pleasing aspects, particularly with regard to the "diplomatic tourism" set in motion between East

and West. That the Soviet leaders have begun to conduct an individualized education of Western statesmen in the art of "peaceful coexistence" by inviting them to Moscow is a highly significant development. In this, naive minds may see something like a return to classical diplomacy but which, in view of the present distribution of power, appears in a rather ominous light. And last but not least there is the dark ambiguity of a policy which in one area—Europe—works toward "relaxation," but at the same time sets out deliberately to increase tension and the danger of war in another area—the Middle East.

Moscow's Offensive in Asia

The most important effect of "de-Stalinization" on Russian foreign policy is in the determination with which the Soviet Union has entered into an area hitherto closed to her influence and attempted to usurp a pseudoprotectorate over the world of the Arab peoples-in-transformation. The dramatic appearance of the Russians on the agitated political stage of the Middle East, however, constitutes only one of the manifestations of the intensive interest they take in the peoples of Asia and Africa now rising against the "colonial powers."

Stalin, with all his brutal and uncouth conduct, was bent primarily on preserving the Soviet state and consolidating his conquests. To this aim, he ruthlessly subordinated the interests of communism in the entire world. His successors, on the other hand, believing the Soviet state quite unassailable today, seem to be pushing the idea of world revolution to the foreground again.

This was made clear by Shepilov, when he told the 20th Congress of the Communist Party of Russia that "the linking of the Socialist revolution with the mass struggle of all the oppressed and dissatisfied in the individual countries" was the hallmark of the present epoch. Moscow is quite prepared to supply the "oppressed"

not only with ideological but also physical weapons from its abundant arsenal if the pace of the revolutionary movement against the "Imperialist" powers can be stepped up thereby.

If anywhere at all, there is present here the struggle of Russian foreign policy for influence over the political development of the countries hitherto not committed to either the West or the East. This is a genuine return to Lenin and his familiar theories on the decline and fall of capitalism; that same Lenin who has been credited with the statement that the way to Paris leads via Peiping and Calcutta.

In this large-scale political and propagandist offensive which is being mounted from Moscow the offers of economic aid to the "underdeveloped countries" play a considerable role in courting the sympathies of the "oppressed and dissatisfied" and as a means of embarrassing and harassing the Western competitors. They are likely to serve this propagandist purpose even if the fulfillment should fall short of the promise since the recipients are said to be inclined to value one ounce of Soviet aid promised as highly as one pound of Western aid delivered.

Aggressive and Expansive

Drawing our conclusions from these considerations, we recognize that the foreign policy of the Soviet Union in the present period of "relaxation" and "peaceful coexistence" is actually more aggressive and expansive than in Stalin's time. This truth is obscured by Moscow's clothing its ideological-political aggressiveness in new formulas, and by the fact that it pursues an expansion of its influence by methods bearing an outward likeness to the conventional instruments of power politics. It cannot be denied that this greater boldness accepts larger risks.

The reconciliation with Tito and the "de-Stalinization" connected with it—saving the Bolshevik "church" from a heresy that was dangerous because it was

successful by way of a revision and enlargement of the official creed—may well give rise to "Titoism" in some other places, especially in the satellite nations where the *ex cathedra* sanctioning of the Titoist variety of communism might be seen as a means of achieving a certain degree of national independence.

It seems that the "collective leadership" in the Kremlin is not afraid of running this risk—of which it must be fully aware—because it considers itself well capable of mastering such stirrings in the wrong places, and perhaps also because it is confident that the over-all European development, in the long run, will be such that a carefully controlled loosening of the reins in the eastern European intermediate zone could no longer endanger the actual hegemony of the Soviet Union on the Continent.

Nevertheless, the recent uprisings have shown that elementary forces and instincts

are still alive in the subjugated satellite nations and cannot always be controlled. The calculations of Stalin's successors include, in addition to the assumed "calculated risks," so many unknown quantities that all the arrogance and sense of infallibility of the disciples of dialectical materialism must underlie their belief that history will run quite true to their textbooks.

The dynamism that has been set in motion by the death of Stalin and "de-Stalinization" in the Soviet bloc, and to which the methods and programs of the new Soviet foreign policy are now committed, also presents the West with some excellent openings, provided—and this is the crucial question—it finds an adequate answer at last to the Communist challenge and evolves a policy that is more than a succession of planless and contradictory isolated moves against the "Red" player on the political chessboard of the world.

Discontinuous Defense

Translated and digested by the MILITARY REVIEW from an article by Brigadier General Antonio Saltini in "Rivista Militare" (Italy) October 1956.

OF THE two forms of combat by means of which defense *à outrance* is developed—static defense and the defense by aggressive offensive action—the function of the first is to slow down and halt the offense if possible, and to support the counteraction. To the second is entrusted the decision of the struggle.

It is obvious that the fewer the forces employed in the static defense, the more forces there will be available for the decision. Since the decision is the ultimate objective of the action (whether defensive or offensive), the ideal static defense is that which ensures the accomplishment of its mission with the least possible anchorage of forces to the terrain.

It follows from this that continuous static defense, based on continuity of in-

fantry fire, is certainly not the ideal type in the case of very extended fronts. It absorbs a great many forces even though the range and the volume of fire of the modern infantry weapons permit the achievement of continuity of fire without material continuity of deployment. Moreover, a large part of the forces—that portion which is deployed on stretches of front that are not under attack—are left out of the fight. This is the heavy tribute which continuous static defense pays for the absence of initiative in the operations.

Such a type of defense is inconsistent with the principles of economy of force and defense because it ties down numerous forces to the terrain, and continuity itself creates an impediment to maneuver. A

great commander could not have a sympathetic attitude toward continuous defensive fronts. A lesser man, on the contrary, will seek them out of an anxious desire to establish a buffer between the enemy and his own lack of capacity for maneuver and for facing hazards.

Continuous static defense on very extended fronts anchored to insurmountable obstacles is characteristic of the first half of our century. It even constituted the dominant note of the art of war of this period. Receiving progressively growing emphasis by the American War of Secession, the Russo-Turkish War, and the British-Boer War, continuous static defense resulted in even more stabilization of the fronts in World War I.

The principal causes which brought about the very extended continuous front are well known: these are summarized in the availability of mass armies; in relative balance of potential between the opposed forces; in the extraordinary power conferred on defense by the sudden increase in volume of flat-trajectory fire of the infantry; and in the inadequate cooperation between the artillery and the attacking infantry.

In World War II the continuous defense became increasingly unpopular due principally to the attenuation of the causes which had determined its rise. In fact, the mass of the armies diminished; the fire of the infantry's flat-trajectory weapons was neutralized considerably by that of the curved-trajectory weapons; and the artillery-infantry cooperation became effective.

Moreover, the increase in use of the armored forces resulted in a comparative weakening in the power of fire, a weakening which, in its turn, called for greater depth in defense which only discontinuity could satisfy. Discontinuous fronts gave birth to defended areas.

But in spite of this, World War II developed largely on the basis of contin-

uous defense. Even the defensive conceptions of the period immediately following World War II were more or less inclined in this direction. Thus although the conceptions of the Italian regulation accepted discontinuity of deployment in the interior of the defended area, continuity of infantry fire was still required. A later regulation, in fixing the norms for defense on broad fronts, accepted discontinuity of fire—but only when it was necessary because of insufficient forces.

Continuous defense on very extended fronts, even when justified by the aforesaid reasons, represents a retrogression in the art of war, especially in comparison with the immediately preceding periods—those of Napoleon and Von Moltke.

Today the advent of the atomic weapon marks the end of continuous static defense. Continuity loses its value since with relative ease and rapidity it can be disrupted by means of atomic fire. Thus the continuity of the static defense probably would be found lacking just where it was most needed: that is to say, in those sectors where the enemy intended to effect a penetration.

It is obvious that any continuous static defense system can be easily upset even by an indiscriminate atomic bombardment. To knock out a discontinuous static system effectively, it is necessary to establish the location, layout, and density of its individual elements; an indiscriminate atomic bombardment directed at it would be the less effective the greater the intervals between the static elements.

The atomic weapon not only necessitates discontinuity of defense, but also diminishes its relative hazards, since it offers the opportunity for promptly countering enemy penetrations in the intervals. In other words, the atomic weapon may be substituted—even if but partially and temporarily—for static defense in those breaks in continuity where the offense may attempt to seek advantage.

Moreover, in atomic warfare, static defense has need of depth to a greater degree than in the past. But continuity and depth of defense are not easily reconciled except by renouncing the principle of economy of forces.

The static defense of the atomic era must, therefore, be discontinuous—that is to say, constituted of spaced, autonomous, and systematically integrated elements. To these must be assigned the mission of barring passage to the enemy and, to a subordinate degree, the mission of slowing down and, if possible, halting the offense.

The static system may be deepened and strengthened during the course of action as the directions of effort of the enemy becomes apparent. Since it is obvious that whenever it is not possible to stop the enemy by means of a counterattack at the point of penetrations, it will be necessary to establish continuity by the utilization of reserves and of supplementary firepower.

The discontinuous concept of defense is indubitably superior to continuous because it is more in accord with the principle of the economy of forces and accommodates itself better to maneuver. Far from constituting a renunciation of

something we have acquired, it represents instead the recovery of something we had lost.

Empty spaces, whether in the tactical or the strategic domain, facilitate lateral maneuver on the part of the offense. Nevertheless, the space between strong points must not be such as to permit the enemy with impunity to make deep and substantial penetrations. These unoccupied areas must be watched and, if the need arises, defended. Above all, they must be regarded as elements of maneuver on the same basis as the strong points—although with different functions.

Based principally on maneuvered reaction, discontinuous defense requires substantial reserves, but it requires commanders of very prompt reflex, of initiative, and of rapid decision.

When has it ever been possible to wage war well without such commanders and such forces?

It is necessary, therefore, to prepare minds for discontinuous defense; a task that is neither easy nor rapid for the generations which have lived altogether or in part in the period of the two World Wars—both of them accommodated to continuous fronts.

Throughout the history of war, men who have fought on land have borne the heaviest burden of fighting as measured by the casualties sustained. We expect combat in the future to impose a heavier burden on the man who fights on land. And in the missile era, the man who controls the land areas will control the space above them. His task will be exceedingly difficult and for him we welcome every possible assistance. To the end that he may obtain it we will give every possible assistance in the development of missiles now, knowing that as an Armed Forces team we exist but for one purpose: to provide the weapons systems that will serve the policies of our people and their established institutions, by enabling them to apply power with accuracy and discrimination against any aggressor, anywhere, any time.

Lieutenant General James M. Gavin

BOOKS OF INTEREST TO THE MILITARY READER

NEGRO MILITIA AND RECONSTRUCTION. By Otis A. Singletary. 181 Pages. The University of Texas Press, Austin, Texas. \$3.75.

By MAJ HARRY H. JACKSON, *Inf*

Historian Otis Singletary has made an excellent contribution to United States military history in this short, well-written study. His subject was organized following the withdrawal of occupying Federal troops from the South after the Civil War. The Radical state governments recruited militias in an effort to maintain themselves in power. These state militias became a causal factor in the eventual overthrow of the Radical power in the South.

The organization of a politically partisan military force by the Radical governments was met by violent counteraction on the part of Southern Conservatives. The unrelenting Conservative hostility and hatred of the militia was at its core, according to the author, based on racial implications.

To destroy the Radical governments the Southern whites resorted to continued violence and bloodshed as an acceptable means of achieving their political ends. "Disbandment through extermination" was implied and practiced. The quasi-military assault on the militia combined by the failure of the Radical leadership to use all-out force against the Conservatives doomed the militia and the governments they supported.

This book sheds much needed light on one little studied aspect of the tragic Reconstruction era in the South.

MIGHTY STONEWALL. By Frank E. Vandiver. 547 Pages. McGraw-Hill Book Co., Inc., New York. \$6.50.

By MAJ CHARLES L. STEEL, JR., *CE*

This modern biography, depicting the full, complex, and yet controversial life of the Confederate general who, with his "foot cavalry," outfoxed, outmarched, and outfought the Federal forces all over the Shenandoah Valley, presents a vital part of the War Between the States.

Dr. Vandiver brilliantly portrays a complete revaluation of both the personal and military aspects of the life of Thomas Jonathan Jackson based on newly uncovered evidence. While Jackson's boyhood, his West Point training, his early combat service in Mexico and Florida, and his years as a professor at Virginia Military Institute are described with an air of passion and intense interest, the military reader will find the highlights of the book centered in the Civil War chronicle. This portion of the book not only describes Jackson's superb capability for independent action by bringing to life the battlefields as seen by Jackson, but also details the system in use during the Civil War with respect to command, staff action, and supply and personnel problems.

Jackson's intense religious beliefs, developed after prolonged mature study, partly explain, what to others seemed aloofness and eccentricity during the stresses of combat.

No military library of the Civil War can be complete without this most recent product by Dr. Vandiver.

WING LEADER. By Group Captain J. E. Johnson. 292 Pages. Ballantine Books, New York. \$4.00. Paperbound \$0.50.

By COL J. C. WINCHESTER, *British Army*

Wing Leader is the personal story of a famous British fighter ace who had 38 accredited victories during World War II. He flew almost continuously as a *Spitfire* pilot from the Battle of Britain until the end of the war in Germany. Later he served with the USAF in Korea and commanded a *Saber Jet* wing in Germany. He now is serving as Deputy Director of Tactical Operations in the Air Ministry, London.

His account of the air fighting in which he participated is modest, factual, and absorbingly interesting. To an airman this should be a fascinating and instructive book. To the soldier it presents a valuable description of the life and mental attitude of officers of a sister service.

THE CAPTIVES OF KOREA. An Unofficial White Paper. By William Lindsay White. 347 Pages. Charles Scribner's Sons, New York. \$4.95.

By MAJ. CHARLES L. STEEL, JR., *CE*

During the Korean war more than 10,000 Americans were captured by the Communists. Of these, only slightly more than one-third survived the oriental version of captivity and returned to give to the free world a first-hand report of what may well be multiplied a thousandfold if the present "cold war" erupts into world war III.

Mr. White has, after exhaustive research, been able to place under a single cover a tale so weird, so horrible that in places it resembles fantasy. Yet the facts presented are indisputable and the author portrays these facts in such a manner as to entice the reader to deduce the "cause and effect."

The military reader will find how discipline, esprit, and rigid training enhanced the chances of an American soldier to survive as a prisoner of war (POW). He also will see how easy it was for US Army of-

ficers as custodians of the North Korean and Communist POW's to so relax control measures that enemy prisoners became the captors of an American general officer.

Finally, this chronicle depicts the fanatical rejection of communism by the North Korean and Chinese POW's. Of the 171,000 prisoners we captured, less than one-half (83,000) chose to return behind the Bamboo Curtain.

The history presented so dramatically in this book not only belongs to the Korean war but to all of the Far East today, and hence the contents should be well digested.

A WATCHER ON THE RHINE. An Appraisal of Germany Today. By Brian Connell. 320 Pages. William Morrow & Co., New York. \$4.00.

By LT COL MITCHEL GOLDENTHAL, *CE*

This is a sobering appraisal of Germany today which thoroughly analyzes her emergence from pulverized ruin to once again being the balance wheel of Europe. Mr. Connell proves and demonstrates adequately his deep understanding and knowledge in his informative, brilliant report on the economic, social, and political forces molding the future of East and West Germany and, perhaps, even Europe.

The emotional, industrial, and political environment and background of Germany cleverly is captured by a spritely, lively writing style which is informative as well as interesting. For example, "In a Europe torn by rival ideologies, Germany has a foot in both camps, and by reason of her geographical position, industrial capacity, population, and technological ability is in a position to alter the fulcrum of European power politics at will. It is high time to consider the direction in which the conflicting forces in the country may tend."

Military readers have had a vitally deep interest in this subject. These readers will find this book extremely rewarding in prognosticating the influences on world strategy and politics of the new Germany.

THE CONQUEST OF THE ANTARCTIC.
By Norman Kemp. 152 Pages. The Philosophical Library, Inc., New York. \$4.75.

By LT COL HAROLD E. BEATY, *CE*

Man's inquisitiveness of the unknown and his desire to conquer the unconquered have spurred scientists and explorers to break the secrets of the frozen Antarctic Continent. During the International Geophysical Year, a more concerted effort is being made by several countries to conquer this forbidding land. The United Kingdom, United States, New Zealand, and Russia have entered this continent with well-organized and well-equipped scientific parties.

Mr. Kemp of New Zealand gives a very brief background to antarctic explorations, but has gone into considerable detail in New Zealand's part in the preparation of the current expedition which is led by Sir Edmund Hillary, the conqueror of Mount Everest.

Although the author spends little time on developing personalities, the reader can gain a quick and accurate résumé of the history and problems of this frozen land. He has presented the historical material in a very interesting and refreshing style.

THE SIGNAL CORPS: THE TEST. By George Paynor Thompson, Dixie R. Harris, Pauline M. Oakes, and Dulany Terrett. 621 Pages. Superintendent of Documents, Government Printing Office, Washington, D. C. \$4.50.

By LT COL ROBERT M. WALKER, *Arty*

Chronological in treatment, this second of three volumes on the history of the Signal Corps in World War II covers a span of 18 months from the "day of infamy" until mid-1943. Obstinate shortages of men, materials, production facilities, training establishments, and, most of all, time had to be overcome. Yet had this been all the story, it would not differ greatly from those of the other services whose

activities also burgeoned under wartime stresses.

Through the early part of the war Signal Corps engineers and technicians were engaged in a desperate game of wits with the enemy in a race to produce electronic weapons and counterweapons. The account of this struggle makes a fascinating story for electronic experts and laymen alike.

The book ends with a crisis brought on by the Signal Corps' long-standing belief that electronics *must* be controlled from the very top echelon of War Department authority. It raises questions which have pertinence today.

WELLINGTON'S HEADQUARTERS: A Study of the Administrative Problems in the Peninsula 1809-1814. By S. G. P. Ward. 219 Pages. Oxford University Press, New York. \$4.80.

By MAJ HARRY H. JACKSON, *Inf*

Oxford scholar S.G.P. Ward has written an excellent introductory vehicle for those interested in the background and functioning of the British staff system. In addition, he has made a genuine contribution to the military library covering the Napoleonic Wars. The problem of bringing order out of the chaotic system of overlapping and conflicting organizations administering the British Army operating in the peninsula is the main theme of this volume.

Against the background of the British operations in Portugal and Spain the structural development of the embryo British general staff system is analyzed. In addition to his investigation of British command and staff relationships in the Napoleonic Wars, Ward makes a brief but excellent survey of contemporary developments in the major European armies of that period. In contrast to Wellington's domination of his staff, the growing ascendancy of the continental staff officer as the alter ego of the commander is noted by the author.

NUCLEAR WEAPONS AND FOREIGN POLICY. By Henry A. Kissinger. 455 Pages. Harper & Brothers, New York. \$5.00.

By COL HEWITT D. ADAMS, *USMC*

The author has done a remarkable job of presenting all sides of the most pressing international question which faces us, "How to attain the objectives of the United States in the nuclear age?" The book was written as the outgrowth of a panel called together by the Council on Foreign Relations to explore all factors in making and implementing foreign policy today. Dr. Kissinger, as study director of the panel, was instructed to write a book for which he alone was responsible but which represented the discussions of the panel.

The book is not easy reading, both because of the complexity of the subject and because the author belabors some points until the reader grows weary of them. However, the reading is worth the effort for the logic of the arguments, the presentation of alternatives, and the timeliness of the content.

The following provocative statements appear in the book:

"The more powerful the weapons, however, the greater becomes the reluctance to use them."

"The growth of the Soviet nuclear stockpile is certain to widen the line between what is considered 'vital' and what is 'peripheral' if we must weigh each objective against the destruction of New York or Detroit, of Los Angeles or Chicago."

"Henceforth, technology can assist strategy primarily by developing new applications for existing weapons, by combining them more efficiently, and by developing subtler and more discriminating uses rather than by adding to their power and speed."

"Thus the argument that limited war may turn into a contest of attrition is in fact an argument in favor of a strategy of limited war."

"The previous analysis has shown that with a doctrine of limited war many of the long-cherished notions of traditional warfare have to be modified. They include the principle that wars can only be won by dominating the air space completely."

"It is a strange doctrine which asserts that vital interests can be defended only by the most catastrophic strategy."

THE COMPACT HISTORY OF THE UNITED STATES NAVY. By Fletcher Pratt. 347 Pages. Hawthorn Books, Inc., New York. \$4.95.

By CAPT ELBERT M. STEVER, *USN*

This is Fletcher Pratt's last book, completed only a few days before his death. It is the second in a series of compact histories of our Armed Services by various authors. The first, by Colonel Dupuy, dealt with the Army. Companion pieces on the Marines and Air Force are in preparation.

Readers who normally shy away from history as a form of voluntary reading should not let the title of this book scare them. Unlike the usual history text, dates and events are subordinated to the historical characters who have made those dates and events significant. The result is a lively narrative of the fortunes and misfortunes of the American Navy man from the days of the early privateers to the present.

Professional historians might raise an eyebrow at the way in which over 150 years of naval history have been compressed. However, those familiar with Fletcher Pratt's many other works know that he has a particular flair for condensation without any sacrifice in readability or historical accuracy.

From the Navy point of view, the author has told the Navy's story with remarkable understanding. This is the type of book that any Navy man would like to have written about his service.

AIRPOWER—THE DECISIVE FORCE IN KOREA. Edited by Colonel James T. Stewart, United States Air Force. 310 Pages. D. Van Nostrand Co., Inc., Princeton, N. J. \$6.50.

By LT COL MITCHEL GOLDENTHAL, CE

This compilation of separate articles from the *Air University Quarterly Review* dramatically purports to establish that airpower was the decisive and, perhaps, the only important force in Korea. All of the articles individually are interesting; some are outstanding. The various chapters are profusely illustrated by truly wonderful pictures, maps, and sketches.

The book is divided into five parts and contains, among others, General Weyland's outstanding analysis of airpower's role in the Korean war; an interesting chapter by Colonel Harrison R. Thyng entitled, "Air-to-Air Combat"; and a discussion of the facet of airpower (light and medium bombers and fighter bombers) which applied direct pressure to the ground enemy. Outstanding chapters are "The Attack on Electric Power in North Korea," "The Bridges at Sinanju and Yongmidong," "The Attack on the Irrigation Dams," "Communist Camouflage and Deception," and "Enemy Bridging Techniques in Korea," by Major Felix Kozaczka. These factual, illustrative articles are expertly written and should be read by all military personnel.

Unfortunately, however, this collection of articles when read together results in a somewhat discontinuous, often repetitive entity. Even the most casually informed reader easily will grasp that the book, as a whole, tends to be improperly focused on rationalizing to a predetermined conclusion. The successes of airpower are trumpeted loudly; most of the shortcomings and weaknesses are glossed over. The devastating effects of antiaircraft fire on airpower in Korea are hardly discussed.

Nevertheless, this is an encouraging

report on our Air Force and makes for exciting, informative reading.

COMMUNISM ON THE DECLINE. By George C. Guins. 287 Pages. The Philosophical Library, Inc., New York. \$7.50.

By LT COL HOWARD L. FELCHLIN, Inf

Is communism in Russia approaching the "final stage" of its existence, or have we sufficient basis to predict the nature of its future development? Professor Guins rejects the probability of evolutionary changes and asserts that communism has reached a point of progressive decay, but with good reason he warns that the death throes of this despotic political system may be very prolonged. The purpose of this well-documented book is to prove that the ultimate disintegration of the Communist system is inevitable.

Detailed evidence from official Soviet sources plausibly suggests the decay of communism since "its achievements cease to satisfy the people, its promises no longer raise enthusiasm, and its infallibility is exposed." Translating these thoughts into specific realities it means, for example, that the housing situation in Russia is still atrocious, the people cannot eat slo-gans, and Stalin was not "god" after all.

The author presents a scholarly survey of the operations and achievements of Soviet bureaucracy, industry, and agriculture as well as many other facets of Soviet life with particular emphasis on the post-war period. He contends that such measures as the abolition of private economy and freedom of expression are "intrinsically wrong and unacceptable to the Russian people."

Whether or not the author has proved his basic premise that communism is "on the way out" is subject to question, but his thought-provoking book offers the military reader a great deal of factual information on the current state of affairs in the Soviet Union.

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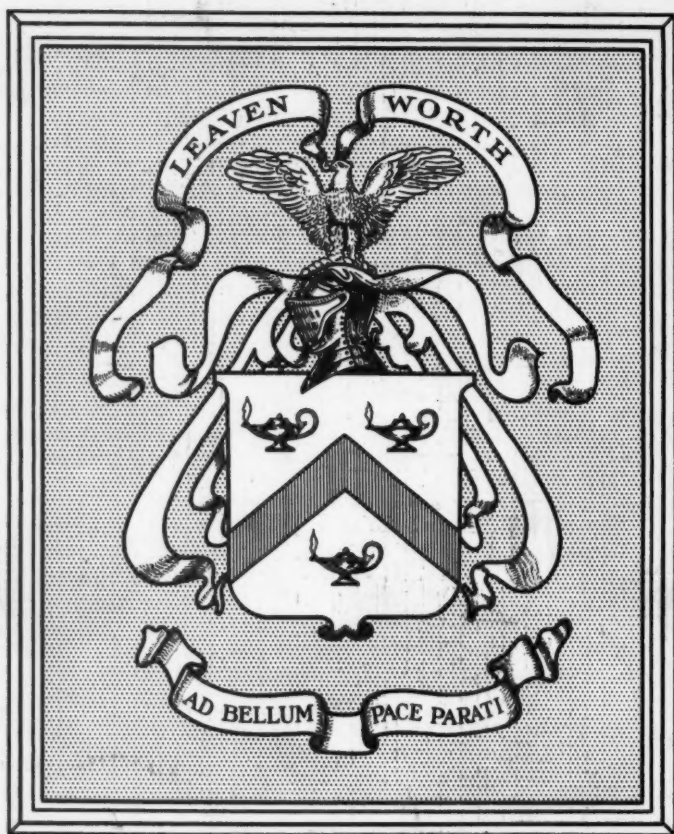
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